

Seismic Retrofit Project



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**NOTICE TO CONTRACTORS
AND
SPECIAL PROVISIONS**

**FOR CONSTRUCTION ON
STATE HIGHWAY**

IN

**THE CITY AND COUNTY OF SAN FRANCISCO AND IN
ALAMEDA COUNTY IN OAKLAND ON THE
SAN FRANCISCO-OAKLAND BAY BRIDGE**

DISTRICT 04, ROUTE 80

For use in Connection with Standard Specifications **DATED JULY, 1992**, Standard
Plans **DATED JULY, 1992**, and Labor Surcharge And Equipment Rental Rates.

CONTRACT NO. 04-043004

INFORMAL BIDS CONTRACT

04-SF,Ala-80-7.8/8.9,0.0/1.1

Bids Open: January 28, 1998

Dated: December 15, 1997

OSD

DEPARTMENT OF TRANSPORTATION

ESC/OE MS #43
P.O. Box 942874
SACRAMENTO, CA 94274-0001



TDD (916) 654-4014

January 14, 1998

04-SF,Ala-80-7.8/8.9,0.0/1.1
04-043004

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in THE CITY AND COUNTY OF SAN FRANCISCO AND IN ALAMEDA COUNTY IN OAKLAND ON THE SAN FRANCISCO-OAKLAND BAY BRIDGE.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on January 28, 1998.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, the Engineer's Estimate and Proposal and Contract.

A copy of Contractor's Inquiry Responses No. 1 dated January 6, 1998 is provided to each Proposal and Contract Book holder.

Project Plan Sheets No. 81, 139 and 140 are revised. Half-sized copies of the revised sheets are attached for substitution for the like numbered sheets.

On Project Plan Sheet No. 58, under the "Quantities" table, the item description "Structure Excavation (Bridge)" is revise to "Structure Excavation (Type H)".

On Project Plan Sheet No. 66, "SECTION A-A", the callout "#5x3'-0" @ 12 drill and bond dowel staggered (epoxy cartridge), see Note 2" is revised to:

"Drill and bond (epoxy cartridge) #5x3'-0" dowel @24 each side of bent centerline (Dowels on far side not shown). The dowels shall be staggered at half spacing. See Note 2."

On Project Plan Sheet No. 66, "Detail C", in the callout in the upper left, the phrase "stagger each side of bent center line" is deleted.

On Project Plan Sheet No. 73, Note 2 of the "Construction Notes" is revised as follows:

"Note 2. The maximum length of removal of existing batten plates shall not exceed 40 feet at any one time."

On Project Plan Sheet No. 73, the following sentence is added after the first sentence of Note 3:

"The bracing at each 10-foot interval shall be equivalent to one existing batten plate secured to each leg by a minimum of 8 one-inch diameter ASTM A325 bolts."

Project Plan Sheets No. 75 and 76 are revised as follows:

"Under "LEGEND" the symbol "  " is revised to "  ".

On Project Plan Sheet No. 75, the following note is added to detail "CS6 AND CS7":

"Note: Not all rivets are shown for which the head is to be removed flush. Four rivets are shown, four additional rivets not shown (total 8 per detail)."

On Project Plan Sheet No. 76, the following note is added to detail "CS10, CS11, CS12, CS13, CS14 AND CS15":

"Note: Not all rivets are shown for which the head is to be removed flush. Four rivets are shown, four additional rivets not shown (total 8 per detail)."

On Project Plan Sheets No. 87, 129 and 167, the following notes are added to the "Tie Rod Assembly" and "Pipe Bracing Assembly" details:

- "a) All rod and pipe sleeve length dimensions are approximate. The length shall be determined by field measurement.
- b) The pipe sleeves shall be cut to fit snug in the space between existing structural sections. Washers are not required at pipe sleeve ends but may be used as shims.
- c) Washers shall be provided under all anchor nuts."

On Project Plan Sheet No. 141, SECTION F-F, the " 1 1/2" typ " dimension to the edge of the elastomeric pad is revised to " 1" typ ".

On Project Plan Sheet No. 141, SECTION F-F, the " 3/4" clr typ from rivet" dimension is revised to " 1/2" clr typ from rivet ".

On Project Plan Sheet No. 142, SECTION G-G, the " 6" " bolt insertion dimension is revised to " 2" ".

On Project Plan Sheet No. 143, DETAIL B, the " 10 1/2" " and " 10 1/8" " dimensions are revised to " 3 1/2" and 3 3/8" ", respectively.

On Project Plan Sheet No. 195, SECTION C-C, the callout "#5 tot 6" and its leader lines are deleted.

In the Notice To Contractors the following paragraph is added after the fourth paragraph:

"Prospective bidders may make arrangements to visit the jobsite by contacting the Toll Bridge Program Duty Senior, at telephone (510) 286-5549."

In the Notice To Contractors, in the sixth paragraph, the e-mail address is revised as follows:

"<http://tresc.dot.ca.gov/sfobb/SFOAKINTinquiry.html>"

In the Special Provisions, Section 2-1.07, "Escrow Of Bid Documentation" is revised as attached.

In the Special Provisions, Section 5-1.135, "Buy America Requirements" is deleted.

In the Special Provisions, Section 5-1.15, "Subcontracting", the following paragraph is added after the second paragraph:

"The first sentence in third paragraph of said Section 8-1.01 is amended to read:

The Contractor shall perform with his own organization contract work amounting to not less than 30 percent of the original total contract price, except that any designated "Specialty Items" may be performed by subcontract and the amount of such "Specialty Items" so performed may be deducted from the original total contract price before computing the amount of work required to be performed by the Contractor with his own organization."

In the Special Provisions, Section 5-1.17, "Disputes Review Board" is revised as attached.

In the Special Provisions, Section 5-1.24, "Relations With The US Navy", the fifth paragraph is revised as follows:

"No clearing of trees is allowed on Yerba Buena Island."

In the Special Provisions, Section 5-1.26, "Relations With The US Coast Guard", the twelfth paragraph is revised as follows:

"No clearing of trees is allowed on Yerba Buena Island."

In the Special Provisions, Section 5-1.28, "Areas For Contractor's Use" the following sentence is added after the first sentence of the first paragraph:

"Any clearing and grubbing required at the area specified in the "Materials Information" shall be at the Contractor's expense."

In the Special Provisions, Section 5-1.30, "Use Of Existing Traveler Rails And Scaffolds", the following paragraph is added after the first paragraph:

"The existing traveler rails may be used in accordance with the requirements in the "Materials Information" available to the Contractor."

In the Special Provisions, Section 5-1.33, "Access To Jobsite" is deleted.

In the Special Provisions, Section 5-1.34, "Drawings", item No. 1 is revised as follows:

"1. Working drawings shall be submitted in accordance with Section 55, "Steel Structures" of the Standard Specifications."

In the Special Provisions, Section 5-1.34, "Drawings", item No. 4 is added after item No. 3 as follows:

"4. Electronic files for all shop drawings shall be on Microstation format or similar."

In the Special Provisions, Section 5-1.35, "Permits And Licenses", in the second paragraph, the first permit is revised as follows:

"San Francisco Bay Conservation and Development Commission (BCDC)-region wide permit No. 9, NOI 97-41."

In the Special Provisions, Section 5-1.35, "Permits And Licenses", the following paragraphs are added after the third paragraph:

"The Contractor shall comply with all applicable provisions of the permits and licenses. The Contractor shall be responsible for all fines, damages and job delays incurred due to failure to implement the requirements of the permit and licenses.

The Contractor shall maintain a copies of the permits and licenses at the construction site and shall make the permits and licenses available to operating personnel during construction activities."

In the Special Provisions, Section 5-1.35, "Permits And Licenses", the following are added to the second paragraph:

"US Coast Guard
US Department Of The Navy"

In the Special Provisions, Section 10-1.01, "Order of Work," the sixth and seventh paragraphs are deleted.

In the Special Provisions, Section 10-1.01, "Order of Work," the following paragraph is added after the ninth paragraph:

"The Contractor shall allow the Santa Cruz Predatory Bird Research Group access to the jobsite."

In the Special Provisions, Section 10-1.07, "Progress Schedule (Critical Path)", the following paragraph is added after the paragraph entitled "Preconstruction Scheduling Conference":

"The baseline schedule submittal shall include a 3 1/2 floppy diskette containing the data files used to generate the schedule."

In the Special Provisions, Section 10-1.07, "Progress Schedule (Critical Path)", item No. 4 of the paragraph entitled "Equipment and Software" is revised as follows:

"4) A two-gigabyte minimum hard disk drive, a 1.44 megabyte 3 1/2 inch floppy disk drive, 16x speed minimum CD-ROM drive, 33.6/14.4 modem and ethernet card."

In the Special Provisions, Section 10-1.08, "Electronic Mobile Daily Diary Computer System" and 10-1.09, "Electronic Mobile Daily Diary System Data Delivery" are revised as attached.

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the following is added after the fifth paragraph:

"The Contractor shall provide the Engineer, prior to establishing a lane closure, a contingency plan in the event of an equipment breakdown or materials failure which would delay opening the lane or lanes within the time limits specified elsewhere in these special provisions. Such contingency plan should include standby equipment and stockpiled materials for temporary use.

Acceptance of the contingency plan by the Engineer shall not relieve the Contractor from the requirement of opening the lane or lanes to public traffic as specified in "Traffic Control System for Lane Closure" of these special provisions. Full compensation for providing the contingency plan and implementing the plan shall be considered as included in the various items of work requiring lane closures."

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the seventh paragraph is revised as follows:

"SCHEDULING CLOSURES.--On or before 12:00 p. m. on Monday of each week the Contractor shall furnish to the Engineer a written schedule of all proposed lane and ramp closures for the following week. Any request for changes to the weekly schedule shall be submitted to the Engineer for approval at least 24 hours prior to the proposed change or as required by the Engineer."

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the ninth paragraph is revised as follows:

"Approval or denial of lane closure requests will be determined by 1:00 p.m. on the Thursday preceding the week of the requested work. Approval does not allow closures other than the date, time, and location indicated. For closures that are postponed due to weather or other unforeseen circumstances, previously approved requests may be submitted for consideration of rescheduling during the week and will be approved only after a case-by-case review by the Engineer."

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the thirteenth paragraph is revised as follows:

"LIQUIDATED DAMAGES.--Should the Contractor fail to provide all lanes ready for use by public traffic at the times specified in the "Lane Closure Charts" included in this section "Maintaining Traffic," on Route 80, liquidated damages will be assessed by the Department as follows:

For each 10 minute period, or fraction thereof, that all lanes are not available for use by public traffic as delineated on the charts, the amount of liquidated damage assessed will be \$7,700.

The maximum amount of such assessment will be \$139,000 per day."

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the following paragraph is added after the fifteenth paragraph:

"These liquidated damages herein provided for are in addition to those specified in Section 4, "Beginning Of Work, Time Of Completion And Liquidated Damages" elsewhere in these special provisions.

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the first sentence of the sixteenth paragraph is revised as follows:

"Personal vehicles of the Contractor's employees shall not be parked within the right of way."

In the Special Provisions, Section 10-1.13, "Maintaining Traffic", the nineteenth paragraph is revised to include March 31st.

In the Special Provisions, Section 10-1.18, "Existing Highway Facilities", the following paragraph is added after the second paragraph:

"Additional miscellaneous reports and documents, including but not limited to design and maintenance investigations, original and supplemental bridge reports, resident engineers reports, construction photographs, maintenance repairs, fender, traveler and barrier rail modifications, that may be reviewed and copied, are available at the Toll Bridge Seismic Retrofit Program Duty Senior's Desk, at 111 Grand Avenue, Oakland, California, (510) 286-5549."

In the Special Provisions, Section 10-1.18A, "Bridge Removal", the sixth paragraph is deleted.

In the Special Provisions, Sections 10-1.18E, "Remove Traffic Stripes" and 10-1.18F, "Remove Thermoplastic Traffic Stripes" are replaced as follows:

"10-1.18E REMOVE PAINTED AND THERMOPLASTIC TRAFFIC STRIPES.

Painted and thermoplastic traffic stripes to be removed will be designated by the Engineer.

Where blast cleaning is used for the removal of painted traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.

The control and disposal of residue shall be described within the storm water pollution plan (SWPPP) as specified elsewhere in these special provisions. The SWPPP shall at a minimum, depict and describe the procedural and structural methods of detaining, collecting, and disposing the residue associated with the blast cleaning operations. Sufficient redundancy, acceptable to the Engineer, shall be incorporated into the procedural and structural methods such that the residues are not conveyed into or become present in drainage systems or the San Francisco Bay.

Nothing in these special provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety," of the Standard Specifications."

In the Special Provisions, Section 10-1.19A, "Contaminated And Hazardous Material Excavation", the first sentence of the seventh paragraph is revised as follows:

"The Contractor's plan to prevent exposure of personnel shall include a physical barrier."

In the Special Provisions, Section 10-1.30, "Steel Structures", the first paragraph of subsection "General" is deleted.

In the Special Provisions, Section 10-3.02, "Cost Break-Down", the second sentence of the fourth paragraph is revised as follows:

"Profit shall be included in each individual unit listed in the cost break-down, however, costs for traffic control system shall not be included."

In the Special Provisions, Section 5-1.37, "Tidal Conditions And Elevation Datum", 5-1.38, "Sound Control Requirements", 5-1.39, "Project Appearance", 5-1.40, "Loads On Existing Structures" are added as attached.

In the Proposal and Contract the "Dispute Review Board Agreement" is deleted.

In the "Copy of Engineer's Estimate" in the NOTICE TO CONTRACTORS and the "Engineer's Estimate" in the PROPOSAL, Item 25 is revised as attached.

To Proposal and Contract book holders:

- REPLACE PAGE 4 OF THE ENGINEER'S ESTIMATE IN THE PROPOSAL WITH THE ATTACHED REVISED PAGE(4 OF THE ENGINEER'S ESTIMATE. THE REVISED ENGINEER'S ESTIMATE IS TO BE USED IN THE BID SUBMITTAL AND INSERTED IN THE PROPOSAL.
- PROVIDE A COPY OF THE MATERIAL HANDOUT.
- INDICATE RECEIPT OF THIS ADDENDUM BY FILLING IN THE NUMBER OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE SIGNATURE PAGE OF THE PROPOSAL.
- Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.
- Inform subcontractors and suppliers as necessary.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it.

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

NICK YAMBAO, Chief
Plans, Specifications &
Estimates Branch
Office of Office Engineer

Attachments

2-1.07 ESCROW OF BID DOCUMENTATION

Bid documentation shall consist of all documentary and calculated information generated by the Contractor in preparation of the bid. The bid documentation shall conform to the requirements in these special provisions, and shall be submitted to the Department and held in escrow for the duration of the contract.

In the resolution of disputes involving the project, the escrowed bid documents will be the only documents accepted from the Contractor regarding preparation of the bid.

In signing the proposal, the bidder certifies that the material submitted for escrow constitutes all the documentary information used in preparation of the bid and that he has personally examined the contents of the container and that they are complete.

The bidder shall include with the proposal, the identification of the bidder's representative authorized to present the bid documentation and the persons responsible for preparing the bidder's estimate.

Nothing in the bid documentation shall be construed to change or modify the terms or conditions of the contract.

Escrowed bid documentation will not be used for pre-award evaluation of the Contractor's anticipated methods of construction, nor to assess the Contractor's qualifications for performing the work.

Bid documentation shall clearly itemize the Contractor's estimated costs of performing the work. The documentation submitted shall be complete and so detailed as to allow for an in-depth analysis of the Contractor's estimate.

The bid documentation shall include, but not be limited to: quantity takeoffs; rate schedules for the direct costs and the time- and nontime-related indirect costs for labor (by craft), plant and equipment ownership and operation, permanent and expendable materials, insurance and subcontracted work; estimated construction schedules, including sequence and duration and development of production rates; quotations from subcontractors and suppliers; estimates of field and home office overhead; contingency and margin for each contract item of work; and other reports, calculations and information used by the bidder to arrive at the estimate submitted with the proposal.

The Contractor shall also submit bid documentation for each subcontractor whose total subcontract exceeds \$250,000. Subcontractor bid documentation shall be enclosed with the Contractor's submittal. The examination of subcontractors' bid documentation will be accomplished in the same manner as for the Contractor's bid documentation. If a subcontractor is replaced, bid documentation for the new subcontractor shall be submitted for review and escrow before authorization for the substitution will be granted. Upon request of a subcontractor, the bid documentation from that subcontractor shall be reviewed only by the subcontractor and the Department.

If the bidder is a joint venture, the bid documentation shall include the joint venture agreement, the joint venture estimate comparison and final reconciliation of the joint venture estimate.

Copies of the proposals submitted by the first, second and third low bidders will be provided to the respective bidders for inclusion in the bid documentation to be escrowed.

The first, second, and third apparent low bidders shall present the bid documentation for escrow at the District 04 Office, 111 Grand Avenue, Room 12-816, Oakland, CA, on the first Monday, at 10:00 a.m., following the time indicated in the "Notice to Contractors" for the opening of bids.

Bid documentation shall be submitted in a sealed container, clearly marked with the bidder's name, date of submittal, project contract number and the words, "Bid Documentation for Escrow."

Failure to submit the actual and complete bid documentation as specified herein within the time specified shall be cause for rejection of the proposal.

Upon submittal, the bid documentation of the apparent low bidder will be examined and inventoried by the duly designated representatives of the Contractor and the Department to ensure that the bid documentation is authentic, legible, and in accordance with the terms of this section "Escrow of Bid Documentation." The examination will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The acceptance or rejection by the Department that the submitted bid documents are in compliance with this section "Escrow of Bid Documentation" shall be completed within 48 hours of the time the bid documentation is submitted by the Contractor.

At the completion of the examination, the bid documents will be sealed and jointly deposited at an agreed commercial bank.

Bid documentation submitted by the second and third apparent low bidders will be jointly deposited at agreed commercial banks. If the apparent low bid is withdrawn or rejected, the bid documentation of the second low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. If the second low bid is withdrawn or rejected, the bid documentation of the third low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. Upon execution and final approval of the contract or rejection of all bids, the bid documentation will be returned to any remaining unsuccessful bidders.

The escrowed bid documentation may be examined by the designated representatives of both the Department and the Contractor, at any time deemed necessary by either the Department or the Contractor to assist in the negotiation of price adjustments and change orders, or in the settlement of claims or disputes.

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If requested by a Disputes Review Board, the escrowed bid documentation may be utilized to assist the Board in its recommendations.

The bid documentation submitted by the Contractor will be held in escrow until the contract has been completed, the ultimate resolution of all disputes and claims has been achieved and receipt of final payment has been accepted by the Contractor. The escrowed bid documentation will then be released from escrow to the Contractor.

The bid documentation submitted by the bidder is, and shall remain, the property of the bidder, and is subject to only joint review by the Department and the bidder. The Department stipulates and expressly acknowledges that the submitted bid documentation constitutes trade secrets and will not be deemed public records. This acknowledgment is based on the Department's express understanding that the information contained in the bid documentation is not known outside the bidder's business, is known only to a limited extent and only by a limited number of employees of the bidder, is safeguarded while in the bidder's possession, is extremely valuable to the bidder and could be extremely valuable to the bidder's competitors by virtue of it reflecting the bidder's contemplated techniques of construction. The Department acknowledges that the bid documentation includes a compilation of information used in the bidder's business, intended to give the bidder an opportunity to obtain an advantage over competitors who do not know of or use the contents of the documentation. The Department agrees to safeguard the bid documentation, and all information contained therein, against disclosure, including disclosure of subcontractor bid documentation to the Contractor and other subcontractors to the fullest extent permitted by law. However, in the event of arbitration or litigation, the bid documentation shall be subject to discovery, and the Department assumes no responsibility for safeguarding the bid documentation unless the Contractor has obtained an appropriate protective order issued by the arbitrator or the court.

Full compensation for preparing the bid documentation, presenting it for escrow and reviewing it for escrow and upon request of the Engineer shall be considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

The direct cost of depositing the bid documentation in escrow at the agreed commercial bank will be paid by the State.

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5-1.17 DISPUTES REVIEW BOARD

To assist in the resolution of disputes or potential claims arising out of the work of this project, a Disputes Review Board, hereinafter referred to as the "DRB", shall be established by the Engineer and Contractor cooperatively upon approval of the contract. The DRB is intended to assist the contract administrative claims resolution process as set forth in the provisions of Section 9-1.04, "Notice of Potential Claim," and Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications, as amended elsewhere in these special provisions. The DRB shall not be considered to serve as a substitute for any requirements in the specifications in regard to filing of potential claims. The requirements and procedures established in this special provision shall be considered as an essential prerequisite to filing a claim, for arbitration or for litigation prior or subsequent to project completion.

The DRB shall be utilized when dispute or potential claim resolution at the job level is unsuccessful. The DRB shall function until the day of acceptance of the contract, at which time the work of the DRB will cease except for completion of unfinished dispute hearings and reports. After acceptance of the contract any disputes or potential claims that the Contractor wants to pursue that have not been settled, shall be stated or restated, by the Contractor, in response to the Proposed Final Estimate within the time limits provided in Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications, as amended elsewhere in these special provisions. The State will review those claims in accordance with Section 9-1.07B, of the Standard Specifications, as amended. Following the completion of the State's administrative claims procedure, the Contractor may resort to arbitration as provided in Section 9-1.10, "Arbitration," of the Standard Specifications.

Disputes, as used in this section, shall include all differences of opinion, properly noticed as provided hereinafter, between the State and Contractor on matters related to the work and other subjects considered by the State or Contractor, or by both, to be of concern to the DRB on this project, except matters relating to Contractor, subcontractor or supplier claims not actionable against the State as specified in these special provisions. Whenever the term "dispute" or "disputes" is used herein, it shall be deemed to include potential claims as well as disputes.

The DRB shall serve as an advisory body to assist in the resolution of disputes between the State and the Contractor, hereinafter referred to as the "parties". The DRB shall consider disputes referred to it, and furnish written reports containing findings and recommendations pertaining to those disputes, to the parties to aid in resolution of the differences between them. DRB findings and recommendations are not binding on the parties.

The DRB shall consist of one member selected by the State, one member selected by the Contractor, and a third member selected by the first two members and approved by both the State and the Contractor. The third member shall act as DRB Chairperson.

The first two DRB members shall select a third DRB member subject to the mutual approval of the parties, or may mutually concur on a list of potentially acceptable third DRB members and submit the list to the parties for final selection and approval of the third member. The goal in selection of the third member is to complement the professional experience of the first two members, and to provide leadership for the DRB's activities.

No DRB member shall have prior direct involvement in this contract, and no member shall have a financial interest in this contract or the parties thereto, within a period of 6 months prior to award of this contract, or during the contract, except as follows:

1. Compensation for services on this DRB.
2. Ownership interest in a party or parties, documented by the prospective DRB member, that has been reviewed and determined in writing by the State to be sufficiently insignificant to render the prospective member acceptable to the State.
3. Service as a member of other Disputes Review Boards on other contracts.
4. Retirement payments or pensions received from a party that are not tied to, dependent on or affected by the net worth of the party.
5. The above provisions apply to any party having a financial interest in this contract; including but not limited to contractors, subcontractors, suppliers, consultants, and legal and business services.

DRB members shall be especially knowledgeable in the type of construction and contract documents potentially anticipated by the contract, and shall discharge their responsibilities impartially and as an independent body considering the facts and circumstances related to the matters under consideration, applicable laws and regulations, and the pertinent provisions of the contract.

The State and the Contractor shall select their respective DRB members, in accordance with the terms and conditions of the Disputes Review Board Agreement and these provisions, within 45 days of the approval of the contract. Each party shall provide written notification to the other of the name of their selected DRB member along with the prospective member's written disclosure statement.

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Before their appointments are final, the first two prospective DRB members shall submit complete disclosure statements to both the State and the Contractor. The statement shall include a resume of the prospective member's experience, together with a declaration describing all past, present and anticipated or planned future relationships, including indirect relationships through the prospective member's primary or full-time employer, to this project and with all parties involved in this construction contract; including, but not limited to, any relevant subcontractors or suppliers to the parties, the parties' principals or the parties' counsel. The DRB members shall also include a full disclosure of close professional or personal relationships with all key members of all parties to the contract. Either the Contractor or the State may object to the others nominee and that person will not be selected for the DRB. No reason need be given for the first objection. Objections to subsequent nominees must be based on a specific breach or violation of nominee responsibilities under this specification. A different person shall then be nominated within 14 Days. The third DRB member shall supply a full disclosure statement to the first two DRB members and to the parties prior to appointment. Either party may reject any of the three prospective DRB members who fail to fully comply with all required employment and financial disclosure conditions of DRB membership as described in the Disputes Review Board Agreement and elsewhere herein. A copy of the Disputes Review Board Agreement is included in this special provision.

The first duty of the State and Contractor selected members of the DRB is to select and recommend prospective third member(s) to the parties for final selection and approval. The first two DRB members shall proceed with the selection of the third DRB member immediately upon receiving written notification from the State of their selection, and shall provide their recommendation simultaneously to the parties within 21 days of the notification.

An impasse shall be considered to have been reached if the parties are unable to approve a third member within 14 days of receipt of the recommendation of the first two DRB members, or if the first two members are unable to agree upon a recommendation within the 14 day time limit allowed in the preceding paragraph. In the event of an impasse in selection of the third DRB member, the State and the Contractor shall each propose three candidates for the third position. The parties shall select all candidates proposed under this paragraph from the current list of arbitrators certified by the Public Works Contract Arbitration Committee created by Article 7.2 (commencing with Section 10245) of the State Contract Act. The first two DRB members shall then select one of the 6 proposed candidates in a blind draw.

The Contractor, the State, and all three members of the DRB shall complete and adhere to the Disputes Review Board Agreement in administration of this DRB within 14 days of the parties' concurrence in the selection of the third member. The State authorizes the Engineer to execute and administer the terms of the Agreement. The person(s) designated by the Contractor as authorized to execute Contract Change Orders shall be authorized to execute and administer the terms of this agreement, or to delegate the authority in writing. The operation of the DRB shall be in conformance with the terms of the Disputes Review Board Agreement.

The State and the Contractor shall bear the costs and expenses of the DRB equally. Each DRB board member shall be compensated at an agreed rate of \$1,000.00 per day if time spent per meeting, including all on-site time plus one hour of travel time, is greater than four hours. Each DRB board member shall be compensated at an agreed rate of \$600.00 per day if time spent per meeting, including all on-site time plus one hour of travel time, is less than or equal to four hours. The agreed rates shall be considered full compensation for on-site time, travel expenses, transportation, lodging, time for travel and incidentals for each day, or portion thereof, that the DRB member is at an authorized DRB meeting. No additional compensation will be made for time spent by DRB members in review and research activities outside the official DRB meetings unless that time, (such as time spent evaluating and preparing recommendations on specific issues presented to the DRB), has been specifically agreed to in advance by the State and Contractor. Time away from the project, that has been specifically agreed to in advance by the parties, will be compensated at an agreed rate of \$100.00 per hour. The agreed amount of \$100.00 per hour shall include all incidentals including any expenses for telephone, fax and computer services. Members serving on more than one DRB, regardless of the number of meetings per day, shall not be paid more than the all inclusive rate per day or rate per hour for an individual project. The State will provide, at no cost to the Contractor, administrative services such as conference facilities and secretarial services to the DRB. These special provisions and the Disputes Review Board Agreement state provisions for compensation and expenses of the DRB. All DRB members shall be compensated at the same daily and hourly rate. The Contractor shall make direct payments to each DRB member for their participation in authorized meetings and approved hourly rate charges from invoices submitted by each DRB member. The State will reimburse the Contractor for its share of the costs. There will be no markups applied to any expenses connected with the DRB, either by the DRB members or by the Contractor when requesting payment of the State's share of DRB expenses.

Service of a DRB member may be terminated at any time with not less than 14 days notice as follows:

1. The State may terminate service of the State appointed member.
2. The Contractor may terminate service of the Contractor appointed member.
3. Upon the written recommendation of the State and Contractor members for the removal of the third member.
4. Upon resignation of a member.

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When a member of the DRB is replaced, the replacement member shall be appointed in the same manner as the replaced member was appointed. The appointment of a replacement DRB member will begin promptly upon determination of the need for replacement and shall be completed within 14 days. Changes in either of the DRB members chosen by the two parties will not require re-selection of the third member, unless both parties agree to such re-selection in writing. The Disputes Review Board Agreement shall be amended to reflect the change of a DRB member.

The following procedure shall be used for dispute resolution:

1. If the Contractor objects to any decision, act or order of the Engineer, the Contractor shall give written notice of potential claim as specified in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications, as amended elsewhere in these special provisions, including provision of applicable cost documentation; or file written protests or notices pursuant to Sections 4-1.03A, "Procedure and Protest", 8-1.06, "Time of Completion", 8-1.07, "Liquidated Damages", or 8-1.10, "Utility and Non-Highway Facilities" of the Standard Specifications.
2. The Engineer will respond, in writing, to the Contractor's written protest or notice within 14 days of receipt of the written protest or notice.
3. Within 14 days after receipt of the Engineer's written response, the Contractor shall, if the Contractor still objects, file a written reply with the Engineer, stating clearly and in detail the basis of the objection.
4. Following the Contractor's objection to the Engineer's decision, the Contractor shall refer the dispute to the DRB if the Contractor wishes to further pursue the objection to the Engineer's decision. The Contractor shall make the referral in writing to the DRB, simultaneously copied to the State, within 21 days after receipt of the written reply from the Engineer. The written dispute referral shall describe the disputed matter in individual discrete segments so that it will be clear to both parties and the DRB what discrete elements of the dispute have been resolved, and which remain unresolved.
5. The Contractor, by failing to submit the written notice of referral of the matter to the DRB within 21 days after receipt of the State's written reply, waives any future claims on the matter in contention.
6. The Contractor and the State shall each be afforded an opportunity to be present and to be heard by the DRB, and to offer evidence. Either party furnishing any written evidence or documentation to the DRB must furnish copies of such information to the other party a minimum of 14 days prior to the date the DRB is scheduled to convene the hearing for the dispute. Either party shall produce such additional evidence as the DRB may deem necessary to reach an understanding and determination of the dispute. The party furnishing additional evidence shall furnish copies of such additional evidence to the other party at the same time the evidence is provided to the DRB. The DRB will not consider any evidence not furnished in accordance with the terms specified herein.
7. The DRB shall furnish a report, containing findings and recommendations as described in the Disputes Review Board Agreement, in writing to both the State and the Contractor. The DRB shall complete its reports, including minority opinion if any, and submit them to the parties within 30 days of the DRB hearing, except that time extensions may be granted at the request of the DRB with the written concurrence of both parties. The report shall include the facts and circumstances related to the matters under consideration, applicable laws and regulations, the pertinent provisions of the Contract and the actual costs and time incurred as shown on the Contractor's cost accounting records.
8. Within 30 days after receiving the DRB's report, both the State and the Contractor shall respond to the DRB in writing signifying that the dispute is either resolved or remains unresolved. Failure to provide the written response within the time specified, or a written rejection of the DRB's recommendation presented in the report by either party, shall conclusively indicate that the party(s) failing to respond accepts the DRB recommendation. Immediately after responses have been received by both parties, the DRB will provide copies of both responses to the parties simultaneously. Either party may request clarification of elements of the DRB's report from the DRB prior to responding to the report. The DRB will consider any clarification request only if submitted within 10 days of receipt of the DRB's report, and if submitted simultaneously in writing to both the DRB and the other party. Each party may submit only one request for clarification for any individual DRB report. The DRB shall respond, in writing, to requests for clarification within 10 days of receipt of such requests.
9. The DRB's recommendations, stated in the DRB's reports, are not binding on either party. Either party may seek a reconsideration of a recommendation of the DRB. The DRB shall only grant a reconsideration based upon submission of new evidence and if the request is submitted within the 30 day time limit specified for response to the DRB's written report. Each party may submit only one request for reconsideration regarding any individual DRB recommendation.
10. If the State and the Contractor are able to resolve their dispute with the aid of the DRB's report, the State and Contractor shall promptly accept and implement the recommendations of the DRB.
11. The State or the Contractor shall not call members who served on the DRB for this contract as witnesses in arbitration proceedings which may arise from this contract, and all documents created by the DRB shall be inadmissible as evidence in subsequent arbitration proceedings, except the DRB's final written reports on each issue brought before it..

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12. The State and Contractor shall jointly indemnify and hold harmless the DRB members from and against all claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of and resulting from the findings and recommendations of the DRB.
13. The DRB members shall have no claim against the State or the Contractor, or both, from any claimed harm arising out of the parties' evaluations of the DRB's report.

Disputes Involving Subcontractor Claims.—For purposes of this section, a "subcontractor claim" shall include any claim by a subcontractor (including also any pass through claims by a lower tier subcontractor or supplier) against the Contractor that is actionable by the Contractor against the Department which arises from the work, services, or materials provided or to be provided in connection with the contract. If the Contractor determines to pursue a dispute against the Department that includes a subcontractor claim, the dispute shall be processed and resolved in accordance with these special provisions and in accordance with the following:

1. The Contractor shall identify clearly in all submissions pursuant to this section, that portion of the dispute that involves a subcontractor claim or claims.
2. The Contractor shall include, as part of its submission pursuant to Step 4 above, a certification (False Claims Act Certification) by the subcontractor's or supplier's officer, partner, or authorized representative with authority to bind the subcontractor and with direct knowledge of the facts underlying the subcontractor claim. The Contractor also shall submit a certification that the subcontractor claim is acknowledged and forwarded by the Contractor. The form for these certifications are available from the Engineer.
3. At any DRB meeting on a dispute that includes one or more subcontractor claims, the Contractor shall require that each subcontractor that is involved in the dispute have present an authorized representative with actual knowledge of the facts underlying the subcontractor claim to assist in presenting the subcontractor claim and to answer questions raised by the DRB members or the Department's representatives.
4. Failure by the Contractor to declare a subcontractor claim on behalf of its subcontractor (including lower tier subcontractors' and suppliers' pass through claims) at the time of submission of the Contractor's claims, as provided hereunder, shall constitute a release of the Department by the Contractor on account of such subcontractor claim.
5. The Contractor shall include in all subcontracts under this contract that subcontractors and suppliers of any tier (a) agree to submit subcontractor claims to the Contractor in a proper form and in sufficient time to allow processing by the Contractor in accordance with the Dispute Review Board resolution specifications; (b) agree to be bound by the terms of the Dispute Review Board provisions to the extent applicable to subcontractor claims; (c) agree that, to the extent a subcontractor claim is involved, completion of all steps required under these Dispute Review Board special provisions shall be a condition precedent to pursuit by the subcontractor of any other remedies permitted by law, including without limitation of a lawsuit against the Contractor; and (d) agree that the existence of a dispute resolution process for disputes involving subcontractor claims shall not be deemed to create any claim, right, or cause of action by any subcontractor or supplier against the Department.

Notwithstanding the foregoing, this Dispute Review Board special provision shall not apply to, and the DRB shall not have the authority to consider, any subcontractor claim between the subcontractor(s) or supplier(s) and the Contractor that is not actionable by the Contractor against the Department.

A copy of the "Disputes Review Board Agreement" to be executed by the Contractor, State and the three DRB members after approval of the contract follows:

DISPUTES REVIEW BOARD AGREEMENT

(Contract Identification)

Contract No. _____

THIS DISPUTES REVIEW BOARD AGREEMENT, hereinafter called "AGREEMENT", made and entered into this _____ day of _____, _____, between the State of California, acting through the California Department of Transportation and the Director of Transportation, hereinafter called the "STATE"; _____ hereinafter called the "CONTRACTOR"; and the Disputes Review Board, hereinafter called the "DRB" consisting of the following members:

_____,
(Contractor Appointee)

_____,
(State Appointee)

and _____
(Third Person)

WITNESSETH, that

WHEREAS, the STATE and the CONTRACTOR, hereinafter called the "parties", are now engaged in the construction on the State Highway project referenced above; and

WHEREAS the special provisions for the above referenced contract provides for the establishment and operation of the DRB to assist in resolving disputes; and

WHEREAS, the DRB is composed of three members, one selected by the STATE, one selected by the CONTRACTOR, and the third member selected by the other two members and approved by the parties;

NOW THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, or attached and incorporated and made a part hereof, the STATE, the CONTRACTOR, and the DRB members hereto agree as follows:

I DESCRIPTION OF WORK

To assist in the resolution of disputes between the parties, the contract provides for the establishment and the operation of the DRB. The intent of the DRB is to fairly and impartially consider disputes placed before it and provide written recommendations for resolution of these disputes to both parties. The members of this DRB shall perform the services necessary to participate in the DRB's actions as designated in Section II, Scope of Work.

II SCOPE OF WORK

The scope of work of the DRB includes, but is not limited to, the following:

A. Objective

The principal objective of the DRB is to assist in the timely resolution of disputes between the parties arising from performance of this contract. It is not intended for either party to default on their normal responsibility to amicably and fairly settle their differences by indiscriminately assigning them to the DRB. It is intended that the mere existence of the DRB will encourage the parties to resolve disputes without resorting to this review procedure. But when a dispute which is serious enough to warrant the DRB's review does develop, the process for prompt and efficient action will be in place.

B. Procedures

The DRB shall render written reports on disputes between the parties arising from the construction contract. Prior to consideration of a dispute, the DRB shall establish rules and regulations that will govern the conduct of its business and reporting procedures in accordance with the requirements of the contract and the terms of this AGREEMENT. DRB recommendations, resulting from its consideration of a dispute, shall be furnished in writing to both parties. The recommendations shall be based on the pertinent contract provisions, and the facts and circumstances involved in the dispute. The recommendations shall find one responsible party in a dispute; shared or "jury" determinations shall not be rendered.

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The DRB shall refrain from officially giving any advice or consulting services to anyone involved in the contract. The individual members shall act in a completely independent manner and while serving as members of the DRB shall have no consulting business connections with either party or its principals or attorneys or any other affiliates (subcontractors, suppliers, etc.) who have a beneficial interest in the contract.

During scheduled meetings of the DRB as well as during dispute hearings, DRB members shall refrain from expressing opinions on the merits of statements on matters under dispute or potential dispute. Opinions of DRB members expressed in private sessions shall be kept strictly confidential. Individual DRB members shall not meet with, or discuss contract issues with individual parties, except as directed by the DRB Chairperson. Any such discussions or meetings shall be disclosed to both parties. Any other discussions regarding the project between the DRB members and the parties shall be in the presence of all three members and both parties. Individual DRB members shall not undertake independent investigations of any kind pertaining to disputes or potential disputes, except with the knowledge of both parties and as expressly directed by the DRB Chairperson.

C. Construction Site Visits, Progress Meetings and Field Inspections

The DRB members shall visit the project site and meet with representatives of the parties to keep abreast of construction activities and to develop familiarity with the work in progress. All scheduled progress meetings shall be held at or near the job site. The DRB shall meet at least once at the start of the project, and at least once every six months thereafter. The frequency, exact time, and duration of additional site visits and progress meetings shall be as recommended by the DRB and approved by the parties consistent with the construction activities or matters under consideration and dispute. Each meeting shall consist of a round table discussion and a field inspection of the work being performed on the contract, if necessary. Each meeting shall be attended by representatives of both parties. The agenda shall generally be as follows:

1. Meeting opened by the DRB Chairperson.
2. Remarks by the STATE's representative.
3. A description by the CONTRACTOR's representative of work accomplished since the last meeting; the current schedule status of the work; and a forecast for the coming period.
4. An outline by the CONTRACTOR's representative of potential problems and a description of proposed solutions.
5. An outline by the STATE's representative of the status of the work as the STATE views it.
6. A brief description by the CONTRACTOR's or STATE's representative of potential claims or disputes which have surfaced since the last meeting.
7. A summary by the STATE's representative, the CONTRACTOR's representative, or the DRB of the status of past disputes and claims.

The STATE's representative will prepare minutes of all regular meetings and circulate them for revision and approval by all concerned.

The field inspection shall cover all active segments of the work, the DRB being accompanied by both parties' representatives. The field inspection may be waived upon mutual agreement of the parties.

D. DRB Consideration and Handling of Disputes

Upon receipt by the DRB of a written referral of a dispute, the DRB shall convene to review and consider the dispute. The DRB shall determine the time and location of DRB hearings, with due consideration for the needs and preferences of the parties while recognizing the paramount importance of speedy resolution of issues. If the matter is not urgent, it may be scheduled for the time of the next scheduled DRB visit to the project. For an urgent matter, and upon the request of either party, the DRB shall meet at its earliest convenience.

Normally, hearings shall be conducted at or near the project site. However, any location which would be more convenient and still provide all required facilities and access to necessary documentation shall be satisfactory.

Both parties shall be given the opportunity to present their evidence at these hearings. It is expressly understood that the DRB members are to act impartially and independently in the consideration of the contract provisions, and the facts and conditions surrounding any dispute presented by either party, and that the recommendations concerning any such dispute are advisory and nonbinding on the parties.

The DRB may request that written documentation and arguments from both parties be sent to each DRB member, through the DRB Chairperson, for review before the hearing begins. A party furnishing any written documentation to the DRB shall furnish copies of such information to the other party at the same time that such information is supplied to the DRB.

DRB hearings shall be informal. There shall be no testimony under oath or cross-examination. There shall be no reporting of the procedures by a shorthand reporter or by any electronic means. Documents and verbal statements shall be received by the DRB in accordance with acceptance standards established by the DRB. Said standards need not comply with prescribed legal laws of evidence.

The third DRB member shall act as Chairperson for dispute hearings and all other DRB activities. The parties shall have a representative at all hearings. Failure to attend a duly noticed meeting by either of the parties shall be conclusively considered by the DRB as indication that the non-attending party considers any written submittals as their entire and complete argument. The claimant shall discuss the dispute, followed by the other party. Each party shall then be allowed one or more rebuttals until all aspects of the dispute are thoroughly covered. DRB members may ask questions, seek clarification, or request further data from either of the parties. The DRB may request from either party documents or information that would assist the DRB in making its findings and recommendations including, but not limited to, documents used by the CONTRACTOR in preparing the bid for the project. A refusal by a party to provide information requested by the DRB may be considered by the DRB as an indication that the requested material would tend to disprove that party's position. Claims shall not necessarily be computed by merely subtracting bid price from the total cost of the affected work. However, if any claims are based on the "total cost method", then, to be considered by the DRB, they shall be supported by evidence furnished by the CONTRACTOR that (1) the nature of the dispute(s) makes it impossible or impracticable to determine cost impacts with a reasonable degree of accuracy, (2) the CONTRACTOR's bid estimate was realistic, (3) the CONTRACTOR's actual costs were reasonable, and (4) the CONTRACTOR was not responsible for the added expenses. As to any claims based on the CONTRACTOR's field or home office accounting records, those claims shall be supported by an audit report of an independent Certified Public Accountant unless the contract includes special provisions that provide for an alternative method to calculate unabsorbed home office overhead. Any of those claims shall also be subject to audit by the DRB with the concurrence of the parties. In large or complex cases, additional hearings may be necessary in order to consider all the evidence presented by both parties. All involved parties shall maintain the confidentiality of all documents and information, as provided in this AGREEMENT.

During dispute hearings, no DRB member shall express an opinion concerning the merit of any facet of the case. All DRB deliberations shall be conducted in private, with all interim individual views kept strictly confidential.

After hearings are concluded, the DRB shall meet in private and reach a conclusion supported by two or more members. Private sessions of the DRB may be held at a location other than the job site or by electronic conferencing as deemed appropriate, in order to expedite the process.

The DRB's findings and recommendations, along with discussion of reasons therefor, shall then be submitted as a written report to both parties. Recommendations shall be based on the pertinent contract provisions, applicable laws and regulations, and facts and circumstances related to the dispute. The report shall be thorough in discussing the facts considered, the contract language, law or regulation viewed by the DRB as pertinent to the issues, and the DRB's interpretation and philosophy in arriving at its conclusions and recommendations. The DRB's report shall stand on its own, without attachments or appendices. The DRB chairman shall complete and furnish a summary report to the DRB Program Manager, Construction Program, M.S. 44, P.O. Box 942874, Sacramento, CA 94274.

With prior written approval of both parties, the DRB may obtain technical services necessary to adequately review the disputes presented; including audit, geotechnical, schedule analysis and other services. The parties' technical staff may supply those services as appropriate. The cost of any technical services, as agreed to by the parties, shall be borne equally by the two parties as specified in an approved contract change order. The CONTRACTOR will not be entitled to markups for the payments made for these services.

The DRB shall resist submittal of incremental portions of information by either party, in the interest of making a fully-informed decision and recommendation.

The DRB shall make every effort to reach a unanimous decision. If this proves impossible, the dissenting member shall prepare a minority opinion, which shall be included in the DRB's report.

Although both parties should place weight upon the DRB's recommendations, they are not binding. Either party may appeal a recommendation to the DRB for reconsideration. However, reconsideration shall only be allowed when there is new evidence to present, and the DRB shall accept only one appeal from each party pertaining to any individual DRB recommendation. The DRB shall hear appeals in accordance with the terms described in the Section entitled "Disputes Review Board" in the special provisions.

E. DRB Member Replacement

Should the need arise to appoint a replacement DRB member, the replacement DRB member shall be appointed in the same manner as the original DRB members were appointed. The selection of a replacement DRB member shall begin promptly upon notification of the necessity for a replacement and shall be completed within 14 days. This AGREEMENT will be amended to indicate change in DRB membership.

III CONTRACTOR RESPONSIBILITIES

The CONTRACTOR shall furnish to each DRB member one copy of all pertinent documents which are or may become necessary for the DRB to perform their function. Pertinent documents are any drawings or sketches, calculations, procedures, schedules, estimates, or other documents which are used in the performance of the work or in justifying or substantiating the CONTRACTOR's position. The CONTRACTOR shall also furnish a copy of such pertinent documents to the STATE, in accordance with the terms outlined in the special provisions.

IV STATE RESPONSIBILITIES

The STATE will furnish the following services and items:

A. Contract Related Documents

The STATE will furnish to each DRB member one copy of Notice to Contractors and Special Provisions, Proposal and Contract, Plans, Standard Specifications, and Standard Plans, change orders, written instructions issued by the STATE to the CONTRACTOR, or other documents pertinent to any dispute that has been referred to the DRB and necessary for the DRB to perform its function.

B. Coordination and Services

The STATE, through the Engineer, will, in cooperation with the CONTRACTOR, coordinate the operations of the DRB. The Engineer will arrange or provide conference facilities at or near the project site and provide secretarial and copying services to the DRB without charge to the CONTRACTOR.

V TIME FOR BEGINNING AND COMPLETION

Once established, the DRB shall be in operation until the day of acceptance of the contract. The DRB members shall not begin any work under the terms of this AGREEMENT until authorized in writing by the STATE.

VI PAYMENT

A. All Inclusive Rate Payment

The STATE and the CONTRACTOR shall bear the costs and expenses of the DRB equally. Each DRB board member shall be compensated at an agreed rate of \$1,000.00 per day if time spent per meeting, including all on-site time plus one hour of travel time, is greater than four hours. Each DRB board member shall be compensated at an agreed rate of \$600.00 per day if time spent per meeting, including all on-site time plus one hour of travel time, is less than or equal to four hours. The agreed rates shall be considered full compensation for on-site time, travel expenses, transportation, lodging, time for travel and incidentals for each day, or portion thereof, that the DRB member is at an authorized DRB meeting. No additional compensation will be made for time spent by DRB members in review and research activities outside the official DRB meetings unless that time has been specifically agreed to in advance by the STATE and CONTRACTOR. Time away from the project, that has been specifically agreed to in advance by the parties, will be compensated at an agreed rate of \$100.00 per hour. The agreed amount of \$100.00 per hour shall include all incidentals including any expenses for telephone, fax and computer services. Members serving on more than one DRB, regardless of the number of meetings per day, shall not be paid more than the all inclusive rate per day or rate per hour for an individual project. The STATE will provide, at no cost to the CONTRACTOR, administrative services such as conference facilities and secretarial services to the DRB.

B. Payments

All DRB members shall be compensated at the same rate. The CONTRACTOR shall make direct payments to each DRB member for their participation in authorized meetings and approved hourly rate charges from invoices submitted by each DRB member. The STATE will reimburse the CONTRACTOR for its share of the costs of the DRB.

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The DRB members may submit invoices to the CONTRACTOR for partial payment for work performed and services rendered for their participation in authorized meetings not more often than once per month during the progress of the work. The invoices shall be in a format approved by the parties and accompanied by a general description of activities performed during that billing period. Payment for any hourly fees, at the agreed rate, shall not be paid to a DRB member until the amount and extent of those fees are approved by the STATE and CONTRACTOR.

Invoices shall be accompanied by original supporting documents, which the CONTRACTOR shall include with the extra work billing when submitting for reimbursement of the STATE's share of cost from the STATE. The CONTRACTOR will be reimbursed for one-half of approved costs of the DRB. No markups will be added to the CONTRACTOR's payment.

C. Inspection of Costs Records

The DRB members and the CONTRACTOR shall keep available for inspection by representatives of the STATE and the United States, for a period of three years after final payment, the cost records and accounts pertaining to this AGREEMENT. If any litigation, claim, or audit arising out of, in connection with, or related to this contract is initiated before the expiration of the three-year period, the cost records and accounts shall be retained until such litigation, claim, or audit involving the records is completed.

VII ASSIGNMENT OF TASKS OF WORK

The DRB members shall not assign any of the work of this AGREEMENT.

VIII TERMINATION OF AGREEMENT, THE DRB, AND DRB MEMBERS

DRB members may resign from the DRB by providing not less than 14 days written notice of the resignation to the STATE and CONTRACTOR. DRB members may be terminated by their original appointing power, in accordance with the terms of the contract.

IX LEGAL RELATIONS

The parties hereto mutually understand and agree that the DRB member in the performance of duties on the DRB, is acting in the capacity of an independent agent and not as an employee of either party.

No party to this AGREEMENT shall bear a greater responsibility for damages or personal injury than is normally provided by Federal or State of California Law.

Notwithstanding the provisions of this contract that require the CONTRACTOR to indemnify and hold harmless the STATE, the parties shall jointly indemnify and hold harmless the DRB members from and against all claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of and resulting from the findings and recommendations of the DRB.

X CONFIDENTIALITY

The parties hereto mutually understand and agree that all documents and records provided by the parties in reference to issues brought before the DRB, which documents and records are marked "Confidential - for use by the DRB only", shall be kept in confidence and used only for the purpose of resolution of subject disputes, and for assisting in development of DRB findings and recommendations; that such documents and records will not be utilized or revealed to others, except to officials of the parties who are authorized to act on the subject disputes, for any purposes, during the life of the DRB. Upon termination of this AGREEMENT, said confidential documents and records, and all copies thereof, shall be returned to the parties who furnished them to the DRB. However, the parties understand that such documents shall be subsequently discoverable and admissible in court or arbitration proceedings unless a protective order has been obtained by the party seeking further confidentiality.

XI DISPUTES

Any dispute between the parties hereto, including disputes between the DRB members and either party or both parties, arising out of the work or other terms of this AGREEMENT, which cannot be resolved by negotiation and mutual concurrence between the parties, or through the administrative process provided in the contract, shall be resolved by arbitration as provided in Section 9-1.10, "Arbitration," of the Standard Specifications.

XII
VENUE, APPLICABLE LAW, AND PERSONAL JURISDICTION

In the event that any party, including an individual member of the DRB, deems it necessary to institute arbitration proceedings to enforce any right or obligation under this AGREEMENT, the parties hereto agree that any such action shall be initiated in the Office of Administrative Hearings of the State of California. The parties hereto agree that all questions shall be resolved by arbitration by application of California law and that the parties to such arbitration shall have the right of appeal from such decisions to the Superior Court in accordance with the laws of the State of California. Venue for the arbitration shall be Sacramento or any other location as agreed to by the parties.

XIII
FEDERAL REVIEW AND REQUIREMENTS

On Federal-Aid contracts, the Federal Highway Administration shall have the right to review the work of the DRB in progress, except for any private meetings or deliberations of the DRB.

All other Federal requirements in this agreement shall only apply to Federal-Aid contracts.

XIV
**CERTIFICATION OF THE CONTRACTOR,
THE DRB MEMBERS, AND THE STATE**

IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT as of the day and year first above written.

DRB MEMBER

By: _____

Title: _____

DRB MEMBER

By: _____

Title : _____

DRB MEMBER

By : _____

Title : _____

CONTRACTOR

By: _____

Title: _____

CALIFORNIA STATE DEPARTMENT
OF TRANSPORTATION

By: _____

Title: _____

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10-1.08 ELECTRONIC MOBILE DAILY DIARY COMPUTER SYSTEM

The Contractor shall provide for the State's exclusive possession and use a complete electronic mobile daily diary computer system, to allow State personnel to record observation (diary) data in the field using Personal Digital Assistants (PDAs), and in the office using desktop workstation(s). Recorded data will be uploaded to a database maintained on an Oracle server. Diary information in the database shall be capable of being edited and printed in the form of an Engineer's Daily Report from desktop workstations connected to the database via a local area network. The system shall also provide other reports required by the Engineer, as well as user friendly and rapid retrieval of daily reports and other information from the database for research purposes.

The Engineer may use the furnished computer hardware, software, and instruction manual for any purposes related to the subject project. Before delivery and set up of the computer system the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims are pending and after the final estimate has been submitted to the Contractor.

The electronic mobile daily diary computer system furnished shall meet the requirements described below for function, data, hardware, and support.

FUNCTIONAL REQUIREMENTS.--The Contractor shall provide, not later than 11 days after contract award, a computer system that complies with the following minimum functional specifications:

DATA COLLECTION SUBSYSTEM.--

1. Accept input of observation data.

General Data.--Allow input of data that applies to all observation data sets:

- Inspector ID: agency-specific code; allow up to 10 alphanumeric characters.
- Inspector password: general text field; allow up to 10 characters.
- Inspector name: general text field; allow up to 30 characters.
- Inspector title: general text field; allow up to 30 characters.

Daily Contract Observation Data.--Collect one or more contract observation data sets per contract per inspector per day:

- Observation date: month, day & year.
- Contract ID: agency-specific code; allow up to 15 alphanumeric characters.
- Uniqueness guarantor: time and time of creation of the data set.
- Weather condition, am and pm: agency-specific code of up to 10 alphanumeric characters.
- Temperature, high and low: signed numeric value of up to 3 digits (degrees Fahrenheit or Celsius).
- Humidity, high and low: percentage value (0 to 100%).
- Start and stop time for inspector shift (24-hour clock; values at the half hour).
- Start and stop time for jobsite shift (24-hour clock; values at the half hour).
- Level of inspection: values are "continuous", "intermittent" and "no inspection".
- Inspector signature: digital image of signature.

Laborer Observation Data.--Collect multiple labor observations per observation data set:

- Contract item or Contract Change Order (CCO): sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- Critical Path Method network (CPM) activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Laborer name: last, first, & middle initial.
- Labor classification: agency-specific code; allow up to 10 alphanumeric characters.
- Trainee status: Boolean value.
- Hours: numeric value (0 to 24; up to 2 places behind the decimal point).
- Hours type flag: flag value to indicate regular vs. overtime hours.
- Force account flag: Boolean value (CCO observations only).

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Equipment Observation Data.--Collect multiple equipment observations per observation data set:

- Contract item or CCO: sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Equipment ID: contractor-specific code; allow up to 10 alphanumeric characters.
- Equipment description ("new" equipment only): general text field; allow up to 60 characters.
- Rental status: Boolean value.
- Hours: numeric value (0 to 24; up to 2 places behind the decimal point).
- Hours type flag: flag value to indicate regular vs. overtime vs. idle hours.
- Force account flag: Boolean value (CCO observations only).

Pay Items Observation Data.--Collect multiple pay items observations per observation data set:

- Contract item or CCO: sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Load ticket ID: Contractor-specific value; allow up to 15 alphanumeric characters.
- Quantity: numeric value; floating point (11,2) specification.
- Lot number: Contractor-specific value; allow up to 15 alphanumeric characters.
- Lab release number: Contractor-specific value; allow up to 15 alphanumeric characters.
- Force account flag: Boolean value (CCO observations only).
- Units type (force account observations only): agency-specific code; allow up to 10 alphanumeric characters.
- Material type (force account observations only): general text field; allow up to 60 characters.

Remarks Data.--Collect multiple remarks per observation data set:

- Contract item or CCO (optional): sequential number; allow up to 6 digits.
- Contractor ID (optional): agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 alphanumeric characters.
- Remark type: agency-specific code; allow up to 10 alphanumeric characters.
- Remark text: general text field; allow up to 2,000 characters.
- Force account flag: Boolean value (CCO observations only).

2. Provide meaningful display of coded information.

- Display contract descriptions in addition to contract numbers.
- Display item/CCO descriptions in addition to item/CCO numbers.
- Display CPM activity descriptions in addition to CPM activity codes.
- Display Contractor names in addition to Contractor IDs.
- Display equipment descriptions in addition to equipment IDs.
- Display labor classification descriptions in addition to labor classification codes.
- Display material types and units of measure based on contract item number.
- Display weather condition descriptions in addition to weather condition codes.

3. Facilitate entry of inspection data.

In general, methods of data entry shall require the minimum number of actions or keystrokes from the user as is practical.

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Provide pick lists from the central database for entry of the following fields:

- Contract numbers.
- Contract item numbers.
- Contractor IDs.
- Laborers.
- Labor classifications.
- Equipment.
- Remark types.
- Weather conditions (am and pm).

Also provide alphabetical tabs for navigating the list of laborer.

Provide option of handwriting or typewriter keypad entry for the following fields:

- Inspector ID, password, name, and title.
- CPM activity code.
- Load ticket number.
- Lot number.
- Lab release number.
- Materials location.
- Remark text.
- Laborer name for “new” people.
- Equipment ID and description for “new” equipment.

Provide option of handwriting or numeric keypad entry for the following fields:

- Contract item number.
- Materials quantity.
- Temperatures (high and low).
- Humidity (high and low).

Provide “clock” controls for entry of the following fields:

- Inspector shift hours.
- Jobsite shift hours.
- Hours (labor & equipment observations).

Provide calendar keypad entry for the following fields:

- Observation date.

Provide checkboxes for entry of the following Boolean fields:

- Trainee status.
- Rental status.
- Force account status.

Provide radio buttons for entry of the following fields:

- Hours type flag (regular, overtime, idle).

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Provide popup menu for entry of the following fields:

- Level of inspection.
- Copy into labor & equipment observations relevant ratebook codes and values from the central database.
- Provide option to use handwriting or typewriter keypad to enter equipment ID for equipment observations and look up the corresponding piece of equipment, as an alternative to choosing the piece of equipment from a list.
- Provide option to change the labor classification for a labor observation even if the laborer name and classification have been selected from a list (to allow observations of laborers working out of their normal classes).

4. Store observation data sets.

- Store all entered data on the mobile platform for up to 100 observations (any combination of types) per contract observation data set.
- Store data for up to 30 observation data sets on the mobile platform.
- Store or backup data on non-volatile memory to guard against data loss.

5. Support review and modification of observation data sets.

Allow user to select observation data sets from a list by identifying:

- Engineer ID.
- Observation date.
- Contract number.
- Once a data set is selected, display all observation entries in an overview list. Allow list to be sorted by observation type, contract item, or Contractor. Also allow list to be restricted by observation type (labor, equipment, materials, or remarks) so that additional data can be displayed for the observations (e.g., labor name, hours & hours type for labor entries).
- Provide option to duplicate observation entries from the list, optionally setting item number & hours fields to new values.
- Allow list entries to be selected and edited.
- Allow user to update weather condition and shift hour data.
- Allow user to duplicate entire observation data sets to a new date selected by the user.
- Allow user to delete observation data sets (after confirmation).

6. Communicate with database server to upload diaries and download control tables.

- Allow user to mark diaries as “done” and collect a signature image at that time. After the diary has been signed, prohibit any other modifications to the diary. If diary is marked “undone” then allow modifications but throw away signature, so that a new signature is always required at whatever point the diary is marked “done” (i.e., ready for transmission).
- Connect to communications server via direct serial connection, providing database user ID and password.
- Send observation data.
 - Select for transmission all observation data sets marked “done” that have not yet been transmitted.
 - Output a serial stream containing the observation data sets to be transmitted.
 - Display status during transmission and provide confirmation that data was sent to the server.
 - Set a flag in transmitted data sets to indicate that they have been transmitted.
 - Be capable of handling unexpected interruptions in the communication link.
- Receive control table data.
 - Automatically request all necessary control table downloads, providing both user ID and date of last download.
 - Accept a serial stream containing control table updates.
 - Display status during transmission and provide confirmation that data was received from the server.
 - Set the date of last update for received control tables.
 - Be capable of handling unexpected interruptions in the communication link.

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7. Provide additional productivity support.
 - Display a list of names with addresses, phone numbers, radio call numbers and vehicle IDs. List entries must be transparently downloaded from a central database along with other control table data.
 - Provide a programmable scientific calculator option.
8. Provide adequate hardware functionality for hand-held computer.
 - Allow data (other than signature image) to be entered with choice of either pen or keyboard.
 - Weigh less than 2 pounds.
 - Battery to have a life of at least 4 continuous hours between chargings.
 - Provide “instant on” capability.
 - Operate within a temperature range of 32 to 104 degrees Fahrenheit (similar to most electronic calculators).
 - Backlit screen

DATABASE COMMUNICATION SUBSYSTEM.--

1. Connect to mobile platform and database server:
 - Connect to mobile platform via direct serial connection.
 - Accept database user ID and password from mobile platform.
 - Use the user ID and password to connect to Oracle database for read/write access, either locally or across a local area network.
2. Upload observation data.
 - Accept upload requests and data from the mobile device.
 - Drive data recognition and database write functions from an editable configuration file.
 - Write observation data to an Oracle database.
 - Be capable of handling unexpected interruptions in the communication link.
3. Download control data.
 - Accept download requests from the mobile device.
 - Drive data selection and database read functions from an editable configuration file and information (user ID and date of last download) supplied by the mobile device, to limit downloads to only the required data.
 - Read information from an Oracle database and output it to the mobile device.
 - Be capable of handling unexpected interruptions in the communication link.
4. Output audit and debugging data.
 - Provide an option to create archive files for data uploads.
 - Provide an option to create trace file output for data uploads.
5. Provide status/feedback on server operations.
 - Display status and information regarding in-progress data transmissions.
 - Provide optional trace window to display low-level actions of the server application in readable form.
6. Allow administrator to control the server application.
 - Allow administrator to start/stop communication activity.
 - Allow administrator to select connection port and configuration file.
 - Allow administrator to select archive and trace options.

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Data Access Subsystem

1. Connect to database server and validate user name and password for authority to access data.
2. View observation data:
 - Retrieve observation data sets based on any combination of the following: date, inspector, contract item number, CCO number, and CPM activity code.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Print observation data sets in a paper version of Daily Diaries. Diaries shall include the following information:
 - First page header: Caltrans logo, contract number & description, date, workday, jobsite and inspector shift hours, weather am/pm, temperature hi/lo, humidity hi/lo, inspector name and signature, page number.
 - Subsequent page header: contract number & description, date, workday, inspector name, page number.
 - Report body: summary of items of work performed, list of laborers, list of equipment, list of pay items, list of general remarks; each section sorted by Structure/Line.
 - Report footer: “end of report” indicator.
 - Print a special “CCO diary” to show only observations for a specified CCO.
 - Print a special “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the California Department of Transportation (Caltrans) construction workday for each diary.
3. Edit observation data:
 - Retrieve observation data sets based on inspector and approval status.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Allow observation data sets to be edited on-line.
 - Allow observation data sets to be created on-line.
 - Allow remark text to be imported from text files.
 - Print observation data sets in a paper version of Daily Diaries.
 - Print “CCO diary” to show only observations for a specified CCO.
 - Print “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the Caltrans construction workday for each diary.
4. Approve observation data:
 - Retrieve observation data sets based on inspector, supervisor, and approval status.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Allow observation data sets to be approved or rejected on-line.
 - Print observation data sets in a paper version of Daily Diaries.
 - Print “CCO diary” to show only observations for a specified CCO.
 - Print “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the Caltrans construction workday for each diary.
5. Report observation data.
 - Display/print an inspector work summary report by date, supervisor, inspector, contract.
 - Display/print a labor compliance report by date, Contractor, employee, contract.
 - Display/print an item detail report for labor hours by date, Contractor, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for equipment hours by date, Contractor, equipment ID, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for pay items by date, Contractor, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for remarks by date, remark type, contract, item/CCO/activity, structure/line.
 - Display/print an extra work report for labor hours by date, Contractor, contract, CCO.
 - Display/print an extra work report for equipment hours by date, Contractor, equipment ID, contract, CCO.
 - Display/print an extra work report for pay items by date, Contractor, contract, CCO.

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6. Prepare source sheets for use in pay estimates.

- Allow source sheets to be selected by contract, item and month.
- Provide storage for estimate data on a per-item basis:
 - Original estimate quantity, changes due to CCO, and current estimate quantity.
 - Quantity previously paid, quantity paid this month, total paid to date.
- Automatically retrieve all pay item observations for the given item and the given month and calculate the total.
- Allow monthly total to be adjusted and reason for adjustment to be recorded.
- Print the resulting source sheets.

7. Allow maintenance of control table data in the Oracle database:

Provide the ability to add, modify or delete entries in the database control tables:

- Users (inspectors).
 - Weather conditions.
 - Labor classifications
 - Remark types.
 - Titles.
 - Name/phone list.
 - Contractors.
 - Laborers.
 - Equipment.
 - Contracts.
 - Contract items.
 - CCOs.
 - CPM activity codes.
 - Inspector assignments to contracts.
 - Contractor assignments to contract items.
- Provide the ability to import lists of laborers & equipment from contractors into the database.
 - Maintain integrity of database constraints during edit and import processes.

8. Provide the capability of generating diagnostic reports to identify the following:

- Duplication of labor, equipment, and materials entries on all diaries for any given date.
- Notification of labor and equipment entries as “new”.

HARDWARE REQUIREMENTS.--The Contractor shall furnish all hardware required for the electronic mobile daily diary computer system, including PDAs, desktop systems, servers, printers, and miscellaneous hardware. The minimum requirements for the various classes of hardware are as follows:

- PDA: Apple Newton 2000 MessagePad, or 100% compatible with 5 MB RAM card, 8MB ROM charging station, carrying case, and Newton OS 2.0.
- Desktop: Complete computer system, including keyboard, mouse and monitor, using the latest available Intel Pentium processor, or equivalent with minimum of sixty-four (64) megabytes of random access memory (RAM), three-gigabyte minimum hard disk drive, 1.44 megabyte 3 1/2 inch floppy disk drive, 16x speed minimum CD-ROM drive, 17-inch minimum monitor capable of at least 1,024 x 768 pixels, and Windows NT user (client) license.
- Printer: HP LaserJet 5-series or 100% compatible.
- Network: Ethernet network with twisted-pair wiring and passive hub.

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The Contractor shall supply hardware for the system in the following quantities:

- 35 – PDA and accessories as described above.
- 04– desktop workstations as described above.
- 01– printers as described above.
- as need it – misc. network hardware and cables as described above.
- 06 – PDA keyboards.
- 04 – PDA print packs.
- 35– Oracle Workgroup Server licenses.
- 200 - WriteRight screen enhancers
- 100 - Replacement styluses for PDAs

SUPPORT REQUIREMENTS.--The Contractor shall furnish all support required for the electronic mobile daily diary computer system. The minimum requirements for support are as follows:

- Installation: initial on-site installation and verification of hardware, software and networks.
- Training: initial on-site training for one half day for up to (35) Caltrans inspectors and database/system administrators.
- Telephone and e-mail support: the Caltrans system administrator may submit operational questions by telephone during normal business hours or by electronic mail at any time. Emergencies will receive immediate attention, and other questions will be answered within one business day.
- Software updates: occasional maintenance updates to the application software, as available.
- On-site visits: scheduled visits to the installation site to check system operation, provide “refresher” or advanced training as applicable, install software updates, as agreed with the Engineer.

The Contractor shall furnish support required for the Electronic Mobile Daily Diary Computer System for a period of 24 months following award of contract.

PAYMENT.--Mobile Daily Diary Computer System will be paid at a lump sum price.

The contract lump sum price paid for the electronic mobile daily diary computer system shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in supplying the mobile daily diary computer system, complete and in place, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payment for providing and implementing this mobile daily diary computer system will be made on a lump sum basis, in 4 milestones as follows:

Milestone 1: This milestone will be satisfied upon delivery and installation of hardware and database software as described under "Hardware Requirements", above. Payment for milestone 1 will equal 45% of total item lump sum cost.

Milestone 2: This milestone will be satisfied upon acceptance of the system by the Engineer as functionally complete per these specifications. Payment for milestone 2 will equal 25% of total item lump sum cost.

Milestone 3: This milestone will be satisfied upon completion of initial training for Department personnel. Training shall be held at a time and location approved by the Engineer. Payment for milestone 3 will equal 15% of total item lump sum cost.

Milestone 4: This milestone will be satisfied upon completion of the third of three feedback sessions between the Electronic Mobile Daily Diary Computer System vendor and Department engineers. Payment for milestone 4 will equal 15% of total item lump sum cost.

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10-1.09 ELECTRONIC MOBILE DAILY DIARY SYSTEM DATA DELIVERY

Attention is directed to Sections 5-1.10, "Equipment and Plants," and 7-1.01A(3), "Payroll Records," of the Standard Specifications, and these special provisions.

The Contractor shall submit to the Engineer a list of each piece of equipment and its identifying number, type, make, model and rate code in accordance with the Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rate" which is in effect on the date upon the work is performed, and the names, labor rates and work classifications for all field personnel employed by the Contractor and all subcontractors in connection with the public work, together with such additional information as is identified below. This information shall be updated and submitted to the Engineer weekly through the life of the project.

This personnel information will only be used for this mobile daily diary computer system and it will not relieve the Contractor and subcontractors from all the payroll records requirements as required by Section 7-1.01A(3), "Payroll Records," of the Standard Specifications.

The Contractor shall provide the personnel and equipment information not later than 11 days after the contract award for its own personnel and equipment, and not later than 5 days before start of work by any subcontractor for the labor and equipment data of that subcontractor.

The minimum data to be furnished shall comply with the following specifications:

Data Content Requirements.--

1. The Contractor shall provide the following basic information for itself and for each subcontractor that will be used on the contract:

| | |
|---|------------------------------------|
| Company name. | Alphanumeric; up to 30 characters. |
| Address (line 1). | Alphanumeric; up to 30 characters. |
| Address (line 2). | Alphanumeric; up to 30 characters. |
| Address (city). | Alphanumeric; up to 30 chars. |
| Address (2-letter state code). | Alphanumeric; up to 2 characters. |
| Address (zip code) | Alphanumeric; up to 14 characters. |
| Contact name. | Alphanumeric; up to 30 characters |
| Telephone number (with area code). | Alphanumeric; up to 20 characters. |
| Company code: short company name. | Alphanumeric; up to 10 characters. |
| DBE status (Caltrans-supplied codes) | Alphanumeric; up to 10 characters. |
| Ethnicity for DBE status (Caltrans-supplied codes). | Alphanumeric; up to 10 characters. |
| List of laborers to be used on this contract (as specified below). | |
| List of equipment to be used on this contract (detail specified below). | |

For example, one such set of information for a company might be:

XYZ Company, Inc.
1240 9th Street
Suite 600
Oakland
CA
94612
John Smith
(510) 834-9999
XYZ
MBE
Black

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2. The Contractor shall provide the following information for each laborer who will be used on the contract:

| | |
|---|------------------------------------|
| Company code (as defined above). | Alphanumeric; up to 10 characters. |
| Last name. | Alphanumeric; up to 20 characters. |
| First name. | Alphanumeric; up to 15 characters. |
| Middle initial. | Alphanumeric; up to 1 characters. |
| Labor classification (Caltrans-provided code) | Alphanumeric; up to 10 characters. |
| Hourly rate. | Alphanumeric; up to (6,2) |
| Trainee status (Y/N). | Alphanumeric; up to 1 characters |
| Ethnicity (Caltrans-provided codes). | Alphanumeric; up to 10 characters. |
| Gender. | Alphanumeric; up to 1 characters. |

For example, one such set of information might be:

XYZ
Gonzalez
Hector
V
OPR
22.75
N
Hispanic
M

3. The Contractor shall provide the following information for each piece of equipment that will be used on the contract:

| | |
|--|------------------------------------|
| Company code (as defined above). | Alphanumeric; up to 10 characters. |
| Company's equipment ID number. | Alphanumeric; up to 10 characters. |
| Company's equipment description. | Alphanumeric; up to 60 characters. |
| Equipment type (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment make (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment model (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment rate code (from Caltrans ratebook) | Alphanumeric; up to 10 characters |
| Hourly rate. | Alphanumeric; up to (6,2) |

For example, one such set of information might be:

XYZ
B043
CAT TRACTOR D-6C
TRACC
CAT
D-6C
3645
28.08

Data Delivery Requirements.--

1. All data described in "Data Requirements" of this section shall be delivered to the Department electronically, on 3 1/4" floppy disks compatible with the Microsoft Windows operating system. The Contractor shall provide a weekly disk and hard copy of the required correct updated personnel and equipment information for the Contractor and all the subcontractors and verified correct by the Engineer.
2. Data of each type of described in the previous section (contractor, labor, and equipment information) will be delivered separately, each type in one or more files on floppy disk. Any given file may contain information from one contractor or from multiple contractors, but only one type of data (contractor, labor, or equipment information).

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3. The file format for all files delivered to Caltrans shall be standard tab-delimited, plain text files. Characteristics of this type of file are:
 - All data is in the form of plain ASCII characters.
 - Each row of data (company, person, equipment) is delimited by a carriage return character.
 - Within rows, each column (field) of data is delimited by a tab character. This type of file is the most standard type for interchange of formatted data; it can be created and read by all desktop spreadsheet and desktop database applications.

For example, one such set of information might be:

XYZ
B043
CAT TRACTOR D-6C
TRACC
CAT
D-6C
3645
28.08

Data Delivery Requirements.--

1. All data described in "Data Requirements" of this section shall be delivered to the Department electronically, on 3 1/4" floppy disks compatible with the Microsoft Windows operating system. The Contractor shall provide a weekly disk and hard copy of the required correct updated personnel and equipment information for the Contractor and all the subcontractors and verified correct by the Engineer.
2. Data of each type of described in the previous section (contractor, labor, and equipment information) will be delivered separately, each type in one or more files on floppy disk. Any given file may contain information from one contractor or from multiple contractors, but only one type of data (contractor, labor, or equipment information).
3. The file format for all files delivered to Caltrans shall be standard tab-delimited, plain text files. Characteristics of this type of file are:
 - All data is in the form of plain ASCII characters.
 - Each row of data (company, person, equipment) is delimited by a carriage return character.
 - Within rows, each column (field) of data is delimited by a tab character. This type of file is the most standard type for interchange of formatted data; it can be created and read by all desktop spreadsheet and desktop database applications.
4. The files shall have the following columns (i.e., each row shall have the following fields):
 - Contractor info: 11 columns (fields) as specified in "Data Requirements #1", above.
 - Labor info: 9 columns (fields) as specified in "Data Requirements #2", above.
 - Equipment info: 8 columns (fields) as specified in "Data Requirements #3", above.

For each type of file, columns (fields) must be in the order specified under "Data Requirements", above. All columns (fields) described under "Data Requirements" must be present for all rows, even if some column (field) values are empty. The first row of each file may contain column headers (in plain text) rather than data, if desired.

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5. Column (field) contents must conform to the data type and length requirements described in the "Data Requirement" section, above. In addition, column (field) data must conform to the following restrictions:
- Labor classification codes must conform to a list of standard codes that will be supplied by Caltrans.
 - DBE status codes must conform to a list of standard codes that will be supplied by Caltrans.
 - Ethnicity codes must conform to standard codes that will be supplied by Caltrans.
 - Data in the "trainee status" column must be either "Y" or "N".
 - Data in the "gender" column must be either "M" or "F".
 - Data in laborer last name, first name and middle initial fields shall be all uppercase. Any letters in the equipment number field shall likewise be uppercase.
 - Equipment owner's description may not be omitted. (The description, together with the equipment number, is how the equipment will be identified in the field.)
 - Equipment type, make, model, and ratebook code shall conform to the Department of Transportation Publication entitled "Labor Surcharge and Equipment Rental Rate", which is in effect on the date upon the work is performed. If the equipment in question does not have an entry in the book then alternate, descriptive entries may be made in these fields.
6. The name of each file must indicate its contents, e.g., "XYZlab.txt" for laborers from XYZ Company, Inc. Each floppy disk supplied to Caltrans must be accompanied by a printed list of the files it contains with a brief description of the contents of each file.

PAYMENT.-- Payment for providing electronic mobile daily diary computer system data delivery will be made on a lump sum basis. The lump sum bid price for electronic mobile daily diary computer system data delivery will be made according to the following schedule:

The Contractor will receive not more than 6.5 per cent per month of the total bid price for electronic mobile daily diary computer system data delivery.

After the completion of the work, 100 per cent payment will be made for electronic mobile daily diary computer system data delivery less the permanent deduction, if any, for failure to deliver complete weekly electronic mobile daily diary computer system data in each month.

The contract lump sum price paid for electronic mobile daily diary computer system data delivery shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in electronic mobile daily diary computer system data delivery as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

In the event the Contractor fails to deliver complete weekly electronic mobile daily diary computer system data in each month, the Department will retain 5 per cent of the total bid price for electronic mobile daily diary computer system data delivery until the data is delivered.

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5-1.37 TIDAL CONDITIONS AND ELEVATION DATUM

Attention is directed to Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work."

Tidal conditions may present significant problems in constructing the work as depicted in the contract plans. Tidal fluctuations may be severe and different from those shown in published tidal and current data due to differences in datum, winter runoff and other causes. Strong currents exist over portions of the project site. Limited time periods of slack water may restrict diving and other underwater activities.

The Contractor is responsible for being knowledgeable of such tidal difficulties, and no payment will be made by the State for any costs incurred by the Contractor in connection with the variations in actual tidal or current conditions during the course of this contract. Any reference to Mean Higher High and Mean Lower Low tides shall be understood to be an estimate used for permit purposes, actual mean tide data shall be determined by the Contractor.

5-1.38 SOUND CONTROL REQUIREMENTS

Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements," of the Standard Specifications and these special provisions.

The noise level from the Contractor's operations, between the hours of 8:00 p.m. and 7:00 a.m., shall not exceed 86 dbA at a distance of 50 feet. No pile driving operation, except when using vibratory hammers only, will be allowed between the hours of 8:00 p.m. and 7:00 a.m. This requirement in no way relieves the Contractor from Said responsibility for complying with local ordinances regulating noise level.

Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

5-1.39 PROJECT APPEARANCE

The Contractor shall maintain a neat appearance to the work. In any area visible to the public, the following shall apply:

When practicable, broken concrete and debris developed during clearing and grubbing shall be disposed of concurrently with its removal. If stockpiling is necessary, the material shall be removed or disposed of weekly.

The Contractor shall furnish trash bins for all debris from structure construction. All debris shall be placed in trash bins daily. Forms or falsework that are to be re-used shall be stacked neatly concurrently with their removal. Forms and falsework that are not to be re-used shall be disposed of concurrently with their removal.

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

ADDED PER ADDENDUM NO. 1 DATED JANUARY 14, 1998

5-1.40 LOADS ON EXISTING STRUCTURES

Anchoring to the bottom of the San Francisco Bay will not be permitted. No lines for anchoring equipment shall be attached to the existing structure except with prior written approval of the Engineer. Such approval, if granted, shall in no way relieve the Contractor of his responsibility for preservation of property as specified in Section 7-1.11, "Preservation of Property," of the Standard Specifications. Attention is directed to "Navigational Requirements" elsewhere in these special provisions.

ENGINEER'S ESTIMATE

04-043004

| Item | Item Code | Item | Unit of Measure | Estimated Quantity | Unit Price | Item Total |
|----------|-----------|---|-----------------|--------------------|------------|------------|
| 21 | 157563 | BRIDGE REMOVAL (PORTION), LOCATION C | LS | LUMP SUM | LUMP SUM | |
| 22 | 157564 | BRIDGE REMOVAL (PORTION), LOCATION D | LS | LUMP SUM | LUMP SUM | |
| 23 | 157565 | BRIDGE REMOVAL (PORTION), LOCATION E | LS | LUMP SUM | LUMP SUM | |
| 24 | 157566 | BRIDGE REMOVAL (PORTION), LOCATION F | LS | LUMP SUM | LUMP SUM | |
| 25 (F) | 192023 | STRUCTURE EXCAVATION (TYPE H) | CY | 198 | | |
| 26 (F) | 193003 | STRUCTURE BACKFILL (BRIDGE) | CY | 166 | | |
| 27 | 390102 | ASPHALT CONCRETE (TYPE A) | TON | 19 | | |
| 28 (F) | 510053 | STRUCTURAL CONCRETE, BRIDGE | CY | 241 | | |
| 29 (S) | 047014 | VISCOUS DAMPER | EA | 6 | | |
| 30 | 511106 | DRILL AND BOND DOWEL | LF | 2,030 | | |
| 31 | 511109 | DRILL AND BOND DOWEL (EPOXY CARTRIDGE) | EA | 155 | | |
| 32 (S) | 515063 | CORE CONCRETE (4") | LF | 355 | | |
| 33 (S) | 047015 | CORE AND PRESSURE GROUT DOWEL | LF | 126 | | |
| 34 (S-F) | 520102 | BAR REINFORCING STEEL (BRIDGE) | LB | 51,000 | | |
| 35 (S-F) | 550203 | FURNISH STRUCTURAL STEEL (BRIDGE) | LB | 1,204,100 | | |
| 36 (S-F) | 550204 | ERECT STRUCTURAL STEEL (BRIDGE) | LB | 1,204,100 | | |
| 37 (F) | 590115 | CLEAN AND PAINT STRUCTURAL STEEL | LS | LUMP SUM | LUMP SUM | |
| 38 (S-F) | 590135 | SPOT BLAST CLEAN AND PAINT UNDERCOAT | SQFT | 23,470 | | |
| 39 | 731502 | MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION) | CY | 13.7 | | |
| 40 | 839301 | SINGLE THRIE BEAM BARRIER (BRIDGE) | LF | 12 | | |

IMPORTANT SPECIAL NOTICES

- Attention is directed to Section 5-1.13, "Year 2000 Compliance," of the Special Provisions.
- The bidder's attention is directed to the following special requirements for this project concerning submission of MBE/WBE/DVBE information, award and execution of contract, and beginning of work:

Attention is directed to Sections 2-1.01, "General," and 2-1.02, "Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE)" of the Special Provisions, regarding changes in listing of subcontractors and joint venture partners. The List of Subcontractors and "Caltrans Bidder MBE/WBE/DVBE Information" forms in the Proposal have also been revised.

Attention is also directed to Section 2-1.03, "MBE/WBE/DVBE Goals for this Project" of the Special Provisions. Contractors bidding on projects with MBE/WBE/DVBE goals may call the Department's Business Enterprise Program at (916) 227-9599 for program information and certification status. NEDA and Triaxial Management Services will no longer provide lists of potential subcontractors to contractors bidding on projects with MBE/WBE/DVBE goals.

First-tier subcontractors that will be used for meeting DBE goals must be listed in the "List of Subcontractors" form regardless of dollar amount of work to be performed. Second- and lower-tier subcontractors need not be listed on the "List of Subcontractors" form. Other, non-DBE subcontractors are to be listed on the "List of Subcontractors" form in accordance with the requirements in Section 2-1.054 of the Standard Specifications and the Special Provisions.

Identify second- and lower-tier MBE, WBE and DVBE subcontractors on the "Caltrans Bidder MBE/WBE/DVBE Information" form.

Subparagraph (d) and subparagraph (h) of Section 2-1.02 has been revised regarding joint venture partners.

MBE/WBE/DVBE information shall be submitted **with the bid proposal**. (See **Section 2-1.04** of the special provisions.) The evaluation of the effort to meet the MBE/WBE/DVBE goal will be based on the information provided with the bid proposal. If the goal was not met, Caltrans' determination of good faith effort will be based on the information provided with the bid, and the decision will be final. Bidders and all subcontractors listed in the MBE/WBE/DVBE Information shall be available, by phone, on the day following the bid opening.

The MBE/WBE/DVBE information shall include all MBE, WBE and DVBE partners.

It is anticipated that this contract will be awarded within **10 days after bid opening**.

If the Bidder submits cash or a cashier's check or a certified check as the form of bidder's security (see Section 2-1.07 of the Standard Specifications), the Bidder shall also include with the bid submittal a signed and notarized affidavit from an admitted surety insurer that contract bonds, as required by Section 3-1.02, "Contract Bonds," of the Standard Specifications, will be provided within the specified time for executing and returning the contract for approval.

If the bidder claims a mistake was made in his bid, the bidder shall give the Department written notice within 48-hours, not including Saturdays, Sundays and legal holidays, after the opening of bids of the alleged mistake in lieu of the 5 days specified in Section 2-1.095, "Relief of Bidders," in the Standard Specifications. (See

Section 2-1.01 of the special provisions.) Caltrans' FAX number for submitting this information is (916)227-6282. Such information shall be submitted "Attention Office Engineer."

The contract shall be signed by the successful bidder and shall be received with contract bonds by the Office of Office Engineer within **4 days**, including Saturdays, Sundays and legal holidays, after the bidder has received notice that the contract has been awarded. (See Section 3 of the special provisions.)

If properly executed by the bidder, it is anticipated the contract will be approved within 24 hours of when the executed contract and contract bonds are received by the Department.

The Contractor shall begin work within 5 calendar days after receiving notice that the contract has been approved. The contract work shall be completed before the expiration of **460 WORKING DAYS** beginning at **12:01 a.m. on the DAY AFTER THE DAY OF CONTRACT AWARD.** The definition of a working day has been re-defined for this project. (See Section 4 of the special provisions.)

The time limit specified in the Special Provisions for the completion of work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. It is expected that additional shifts will be required throughout the life of the contract to the extent deemed necessary to ensure that the work will be completed within the time limit specified. (See Section 4 of the Special Provisions).

The following forms have been included at the end of the Proposal and Contract book to assist the successful bidder in early execution of the contract documents: Payment Bond, Performance Bond, Insurance, Vendor Data Record.

CONTRACT NO. 04 043004


The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

HIGHWAY


REGISTERED CIVIL ENGINEER



ELECTRICAL


REGISTERED ELECTRICAL
ENGINEER

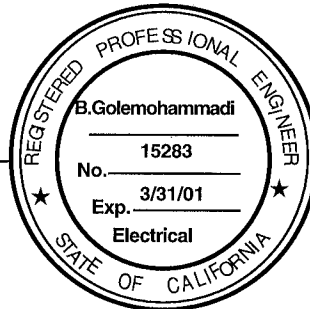


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DEPARTMENT OF TRANSPORTATION

NOTICE TO CONTRACTORS

THIS IS AN INFORMAL BIDS CONTRACT

CONTRACT NO. 04-043004

04-SF,Ala-80-7.8/8.9,0.0/1.1

Sealed proposals for the work shown on the plans entitled:

**STATE OF CALIFORNIA; DEPARTMENT OF TRANSPORTATION; PROJECT
PLANS FOR CONSTRUCTION ON STATE HIGHWAY IN THE CITY AND
COUNTY OF SAN FRANCISCO AND IN ALAMEDA COUNTY IN OAKLAND ON
THE SAN FRANCISCO-OAKLAND BAY BRIDGE**

will be received at the Department of Transportation, 1120 N Street, Room 0200, MS #26, Sacramento, California 95814, until 2 o'clock p.m. on January 28, 1998, at which time they will be publicly opened and read in Room 0100 at the same address.

Proposal forms for this work are included in a separate book entitled:

**STATE OF CALIFORNIA; DEPARTMENT OF TRANSPORTATION; PROPOSAL
AND CONTRACT FOR CONSTRUCTION ON STATE HIGHWAY IN THE CITY
AND COUNTY OF SAN FRANCISCO AND IN ALAMEDA COUNTY IN OAKLAND
ON THE SAN FRANCISCO-OAKLAND BAY BRIDGE**

General work description: Seismic Retrofitting of the existing San Francisco-Oakland Bay Bridge.

This project has a combined goal of 15 percent minority business enterprise (MBE), women business enterprise (WBE) and disabled veteran business enterprise (DVBE) participation.

No pre-bid meeting is scheduled for this project.

Bidder inquiries may be made as follows:

For structures work: Structures PS&E Duty Senior, Specifications and Estimating Branch, telephone number (916) 227-8770.

For all other inquiries: Toll Bridge Retrofit Program Duty Senior at District 04 Office, 111 Grand Avenue, Oakland, California 94612; Fax Number (510) 286-4563, e-mail ybermude@trmx3.dot.ca.gov, telephone number (510) 286-5549.

Bidders will be requested to submit their inquiries in writing to the Oakland address, accompanied by an electronic copy where feasible, in order to avoid any misunderstandings. Written inquiries shall include the bidder's name, address and phone number. Written inquiries will be investigated and an addendum to the contract will be issued to the extent feasible and at the discretion of the Department. A copy of each addendum will also be posted on the Internet at "<http://tresp.dot.ca.gov/sfobb/inquiry.html>."

The time limit specified for the completion of the work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. Should the Contractor fail to maintain the progress of the work in accordance with the "Progress Schedule" required in these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the abovementioned schedule and that the work will be completed within the time limit specified.

Bids are required for the entire work described herein.

At the time this contract is awarded, the Contractor shall possess either a Class A license or a combination of Class C licenses which constitutes a majority of the work.

The Contractor must also be properly licensed at the time the bid is submitted, except that on a joint venture bid a joint venture license may be obtained by a combination of licenses after bid opening but before award in accordance with Business and Professions Code, Section 7029.1.

This contract is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990.

Preference will be granted to bidders properly certified as a "Small Business" as determined by the Department of General Services, Office of Small and Minority Business at the time of bid opening in accordance with the provisions in Section 2-1.04, "Small Business Preference," of the special provisions, and Section 1896 et seq, Title 2, California Code of Regulations. A form for requesting a "Small Business" preference is included with the bid documents. Applications for status as a "Small Business" must be submitted to the Department of General Services, Office of Small and Minority Business, 1531 "I" Street, Second Floor, Sacramento, CA 95814, Telephone No. (916) 322-5060.

A reciprocal preference will be granted to "California company" bidders in accordance with Section 6107 of the Public Contract Code. (See Sections 2 and 3 of the special provisions.) A form for indicating whether bidders are or are not a "California company" is included in the bid documents and is to be filled in and signed by all bidders.

Project plans, special provisions, and proposal forms for bidding this project can only be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, Transportation Building, 1120 N Street, MS #26, Sacramento, California 95814, FAX No. (916) 654-7028, Telephone No. (916) 654-4490. Use FAX orders to expedite orders for project plans, special provisions and proposal forms. FAX orders must include credit card charge number, card expiration date and authorizing signature. Project plans, special provisions, and proposal forms may be seen at the above Department of Transportation office and at the offices of the District Directors of Transportation at Santa Ana, Oakland, and the district in which the work is situated. Standard Specifications and Standard Plans are available through the State of California, Department of Transportation, Publications Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815, Telephone No. (916) 445-3520.

Cross sections for this project are not available.

The successful bidder shall furnish a payment bond and a performance bond.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at the Labor Compliance Office at the offices of the District Director of Transportation for the district in which the work is situated, and available from the California Department of Industrial Relations' Internet Web Site at: <http://www.dir.ca.gov>. Future effective general prevailing wage rates which have been predetermined and are on file with the Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

DEPARTMENT OF TRANSPORTATION

Deputy Director Transportation Engineering

Dated December 15, 1997

RRF/SPM

Contract No. 04-043004

COPY OF ENGINEER'S ESTIMATE
(NOT TO BE USED FOR BIDDING PURPOSES)

04-043004

| Item | Item Code | Item | Unit of Measure | Estimated Quantity | Unit Price | Item Total |
|-------|-----------|--|-----------------|--------------------|------------|------------|
| 1 | 011309 | ELECTRONIC MOBILE DAILY DIARY SYSTEM DATA DELIVERY | LS | LUMP SUM | LUMP SUM | |
| 2 | 011835 | TIME RELATED OVERHEAD | WDAY | 460 | | |
| 3 | 070010 | PROGRESS SCHEDULE (CRITICAL PATH) | LS | LUMP SUM | LUMP SUM | |
| 4 | 012001 | ELECTRONIC MOBILE DAILY DIARY COMPUTER SYSTEM | LS | LUMP SUM | LUMP SUM | |
| 5 | 071321 | TEMPORARY FENCE (TYPE CL-6) | LF | 1,150 | | |
| 6 | 074019 | PREPARE STORM WATER POLLUTION PREVENTION PLAN | LS | LUMP SUM | LUMP SUM | |
| 7 | 074020 | WATER POLLUTION CONTROL | LS | LUMP SUM | LUMP SUM | |
| 8 (S) | 120090 | CONSTRUCTION AREA SIGNS | LS | LUMP SUM | LUMP SUM | |
| 9 (S) | 120100 | TRAFFIC CONTROL SYSTEM | LS | LUMP SUM | LUMP SUM | |
| 10 | 120165 | CHANNELIZER (SURFACE MOUNTED) | EA | 36 | | |
| 11 | 129000 | TEMPORARY RAILING (TYPE K) | LF | 720 | | |
| 12 | 129100 | TEMPORARY CRASH CUSHION MODULE | EA | 20 | | |
| 13 | 150711 | REMOVE PAINTED TRAFFIC STRIPE | LF | 7,250 | | |
| 14 | 150714 | REMOVE THERMOPLASTIC TRAFFIC STRIPE | LF | 3,360 | | |
| 15 | 150722 | REMOVE PAVEMENT MARKER | EA | 1,600 | | |
| 16 | 047013 | WORK AREA MONITORING | LS | LUMP SUM | LUMP SUM | |
| 17 | 151540 | RECONSTRUCT CHAIN LINK FENCE | LF | 28 | | |
| 18 | 153210 | REMOVE CONCRETE | CY | 14 | | |
| 19 | 157561 | BRIDGE REMOVAL (PORTION), LOCATION A | LS | LUMP SUM | LUMP SUM | |
| 20 | 157562 | BRIDGE REMOVAL (PORTION), LOCATION B | LS | LUMP SUM | LUMP SUM | |

COPY OF ENGINEER'S ESTIMATE
(NOT TO BE USED FOR BIDDING PURPOSES)

04-043004

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| 21 | 157563 | BRIDGE REMOVAL (PORTION), LOCATION C | LS | LUMP SUM | LUMP SUM | |
| 22 | 157564 | BRIDGE REMOVAL (PORTION), LOCATION D | LS | LUMP SUM | LUMP SUM | |
| 23 | 157565 | BRIDGE REMOVAL (PORTION), LOCATION E | LS | LUMP SUM | LUMP SUM | |
| 24 | 157566 | BRIDGE REMOVAL (PORTION), LOCATION F | LS | LUMP SUM | LUMP SUM | |
| 25 (F) | 192003 | STRUCTURE EXCAVATION (BRIDGE) | CY | 198 | | |
| 26 (F) | 193003 | STRUCTURE BACKFILL (BRIDGE) | CY | 166 | | |
| 27 | 390102 | ASPHALT CONCRETE (TYPE A) | TON | 19 | | |
| 28 (F) | 510053 | STRUCTURAL CONCRETE, BRIDGE | CY | 241 | | |
| 29 (S) | 047014 | VISCOUS DAMPER | EA | 6 | | |
| 30 | 511106 | DRILL AND BOND DOWEL | LF | 2,030 | | |
| 31 | 511109 | DRILL AND BOND DOWEL (EPOXY CARTRIDGE) | EA | 155 | | |
| 32 (S) | 515063 | CORE CONCRETE (4") | LF | 355 | | |
| 33 (S) | 047015 | CORE AND PRESSURE GROUT DOWEL | LF | 126 | | |
| 34 (S-F) | 520102 | BAR REINFORCING STEEL (BRIDGE) | LB | 51,000 | | |
| 35 (S-F) | 550203 | FURNISH STRUCTURAL STEEL (BRIDGE) | LB | 1,204,100 | | |
| 36 (S-F) | 550204 | ERECT STRUCTURAL STEEL (BRIDGE) | LB | 1,204,100 | | |
| 37 (F) | 590115 | CLEAN AND PAINT STRUCTURAL STEEL | LS | LUMP SUM | LUMP SUM | |
| 38 (S-F) | 590135 | SPOT BLAST CLEAN AND PAINT UNDERCOAT | SQFT | 23,470 | | |
| 39 | 731502 | MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION) | CY | 13.7 | | |
| 40 | 839301 | SINGLE THRIE BEAM BARRIER (BRIDGE) | LF | 12 | | |

COPY OF ENGINEER'S ESTIMATE
(NOT TO BE USED FOR BIDDING PURPOSES)
04-043004

| Item | Item Code | Item | Unit of Measure | Estimated Quantity | Unit Price | Item Total |
|-----------|-----------|---|-----------------|--------------------|------------|------------|
| 41 (S) | 840504 | 4" THERMOPLASTIC TRAFFIC STRIPE | LF | 3,360 | | |
| 42 (S) | 840656 | PAINT TRAFFIC STRIPE (2-COAT) | LF | 7,250 | | |
| 43 (S) | 850100 | PAVEMENT MARKER (REFLECTIVE-SPECIAL TYPE C) | EA | 404 | | |
| 44 (S) | 850101 | PAVEMENT MARKER (NON-REFLECTIVE) | EA | 1,210 | | |
| 45 (S) | 012003 | ELECTRICAL FACILITIES (SEISMIC RETROFIT) | LS | LUMP SUM | LUMP SUM | |
| 46 | 047016 | MODIFY WATER AND AIR LINES (BRIDGE) | LS | LUMP SUM | LUMP SUM | |
| 47 | 999990 | MOBILIZATION | LS | LUMP SUM | LUMP SUM | |

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

SPECIAL PROVISIONS

Annexed to Contract No. 04-043004

SECTION 1. SPECIFICATIONS AND PLANS

The work embraced herein shall be done in accordance with the Standard Specifications dated July, 1992, and the Standard Plans dated July, 1992, of the Department of Transportation insofar as the same may apply and in accordance with the following special provisions.

In case of conflict between the Standard Specifications and these special provisions, the special provisions shall take precedence over and be used in lieu of the conflicting portions.

SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 GENERAL

The bidder's attention is directed to the provisions in Section 2, "Proposal Requirements and Conditions," of the Standard Specifications and these special provisions for the requirements and conditions which the bidder must observe in the preparation of the proposal form and the submission of the bid.

In addition to the subcontractors required to be listed in accordance with Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications, each proposal shall have listed therein the name and address of each MBE, WBE and DVBE subcontractor to be used for credit in meeting the goals, and to whom the bidder proposes to directly subcontract portions of the work. The list of subcontractors shall also set forth the portion of work that will be done by each subcontractor listed. A sheet for listing the subcontractors is included in the Proposal.

The form of Bidder's Bond mentioned in the last paragraph in Section 2-1.07, "Proposal Guaranty," of the Standard Specifications will be found following the signature page of the Proposal.

If the Bidder submits cash or a cashier's check or a certified check as the form of bidder's security (See said Section 2-1.07 of the Standard Specifications), the Bidder shall also include with the bid submittal a signed and notarized affidavit from an admitted surety insurer that contract bonds, as required by Section 3-1.02, "Contract Bonds," of the Standard Specifications, will be provided within the time specified elsewhere in these special provisions for executing and returning the contract for approval.

In accordance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Proposal. Signing the Proposal shall also constitute signature of the Noncollusion Affidavit.

If the bidder claims a mistake was made in his bid, the bidder shall give the Department written notice within 48 hours, not including Saturdays, Sundays and legal holidays, after the opening of bids of the alleged mistake, in lieu of the 5 days specified in Section 2-1.095, "Relief of Bidders," in the Standard Specifications. The notice of alleged mistake shall specify in detail how the mistake occurred.

2-1.02 MINORITY BUSINESS ENTERPRISE (MBE), WOMEN BUSINESS ENTERPRISE (WBE) AND DISABLED VETERAN BUSINESS ENTERPRISE (DVBE)

Section 10115 of the Public Contract Code requires the Department to implement provisions to establish goals for Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disabled Veterans Business Enterprise (DVBE) in contracts.

It is the policy of the Department that Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE) shall have the maximum opportunity to participate in the performance of contracts financed solely with state funds. The Contractor shall ensure that MBEs, WBEs and DVBEs have the maximum opportunity to participate in the performance of this contract and shall take all necessary and reasonable steps for this assurance. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts. Failure to carry out the requirements of this paragraph shall constitute a breach of contract and may result in termination of this contract or other remedy the Department may deem appropriate.

Bidder's attention is directed to the following matters:

(a) "Minority Business Enterprise" means a business concern that meets all of the following criteria:

(1) The business is an individual proprietorship, partnership, corporation, or joint venture at least 51 percent owned by one or more minorities or, in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minorities;

(2) A business whose management and daily operations are controlled by one or more minorities who own the business;

(3) A business concern with its home office located in the United States which is not a branch or subsidiary of a foreign corporation, firm, or other business.

(b) "Women Business Enterprise" means a business concern that meets all of the following criteria:

(1) The business is an individual proprietorship, partnership, corporation, or joint venture at least 51 percent owned by one or more women or, in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women;

(2) A business whose management and daily operations are controlled by one or more women who own the business;

(3) A business concern with its home office located in the United States which is not a branch or subsidiary of a foreign corporation, firm, or other business.

(c) "Disabled Veteran Business Enterprise" means a business concern certified by the Office of Small and Minority Business as meeting all of the following:

(1) A sole proprietorship owned by one or more disabled veterans, or in the case of a publicly owned business, at least 51 percent of its stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation, but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans;

(2) The management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business concern;

(3) A sole proprietorship, corporation, or partnership with its home office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other business.

(d) "Minority" means a citizen or lawful permanent resident of the United States who is an ethnic person of color and who is: Black (a person having origins in any of the Black racial groups of Africa); Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin regardless of race); Native American (an American Indian, Eskimo, Aleut, or Native Hawaiian); Pacific-Asian (a person whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, or the United States Trust Territories of the Pacific including the Northern Marianas); Asian-Indian (a person whose origins are from India, Pakistan, or Bangladesh);

(e) "Disabled Veteran" means a veteran of military, naval or air services of the United States with at least 10 percent service-connected disability who is a resident of the State of California;

(f) An MBE or WBE bidder, not bidding as a joint venture with a non-MBE or non-WBE, will be required to meet the MBE and WBE goals through subcontracting or material purchases or make good faith effort to do so;

(g) A DVBE bidder will be required to meet the DVBE goal by using other DVBEs;

(h) An MBE, WBE or DVBE may participate as a subcontractor, joint venture partner with a prime or subcontractor, or vendor of material or supplies;

(i) An MBE, WBE or DVBE joint venture partner must be responsible for specific contract items of work, or portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The MBE, WBE or DVBE joint venture partner must share in the ownership, control, management responsibilities, risks and profits of the joint venture. The MBE or WBE joint venturer must submit the joint venture agreement, and California Department of Transportation Business Enterprise Program form entitled "Minority/Disadvantaged/Women Business Enterprise Joint Venture." This information must be submitted with the MBE/WBE/DVBE Information form required in Section 2-1.04, "Submission of MBE/WBE/DVBE Information," elsewhere in these special provisions;

(j) An MBE, WBE or DVBE must perform a commercially useful function, i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work;

(k) Credit for MBE, WBE and DVBE vendors of materials or supplies is limited to 60 percent of the amount to be paid to the vendor for the material unless the vendor manufactures or substantially alters the goods;

(l) Credit for trucking by MBEs, WBEs and DVBEs will be as follows:

(1) One hundred percent of the amount to be paid when an MBE, WBE or DVBE trucker will perform the trucking with his/her own trucks, tractors and employees;

(2) Twenty percent of the amount to be paid to MBE, WBE and DVBE trucking brokers who do not have a "certified roster";

(3) One hundred percent of the amount to be paid to MBE, WBE and DVBE trucking brokers who have:

a. signed agreements that all trucking will be performed by MBE, WBE or DVBE truckers if credit is toward MBE and WBE goal, or DVBE goal;

b. a "certified roster" showing that all trucks are owned by certified MBEs, WBEs or DVBEs; and

c. a signed statement on the "certified roster" that indicates that 100 percent of revenue paid by the broker will be paid to the MBEs, WBEs or DVBEs listed on the "certified roster".

(4) Twenty percent of the amount to be paid to trucking brokers who are not an MBE, WBE or DVBE but who have:

a. signed agreements with MBE, WBE or DVBE truckers assuring that at least 20 percent of the trucking will be performed by MBE, WBE or DVBE truckers if credit is toward MBE or WBE goal, or DVBE goal;

b. a "certified roster" showing that at least 20 percent of the number of trucks are owned by certified MBE, WBE or DVBE truckers; and

c. a signed statement on the "certified roster" that indicates that at least 20 percent of the revenue paid by the broker will be paid to the MBEs, WBEs or DVBEs listed on the "certified roster".

The "certified roster" referred to herein shall conform to the requirements in Section 3-1.01A, "MBE/WBE/DVBE Information," of these special provisions;

(m) MBEs, WBEs and MBE and WBE joint venture partners, must be certified as of the date of bid opening either by the California Department of Transportation, or by a participating State of California or local agency which certifies in accordance with Title 49, Code of Federal Regulations, Part 23. Listings of MBEs and WBEs certified by the Department are available from the following sources:

(i) The Department's DB/WBE Directory which is published quarterly. The DB/WBE Directory may be obtained from the Department of Transportation, Publications Unit, 1900 Royal Oaks Drive, Sacramento, California 95815, Telephone: (916) 445-3520. An order form is available on the Internet at www.dot.ca.gov/hq/purchase/publicat.htm;

(ii) The Department's Electronic Information Bulletin Board Service (DB/WBE/BBS), which is accessible by modem and is updated weekly. The DB/WBE/BBS may be accessed by first contacting the Department's Business Enterprise Program at Telephone: (916) 227-8937 and obtaining a user identification and password;

It is the Contractor's responsibility to verify that MBEs and WBEs are certified;

(n) DVBEs and DVBE joint venture partners must be certified DVBEs as determined by the Department of General Services, Office of Small and Minority Business, 1531 "I" Street, Second Floor, Sacramento, CA 95814, on the date bids for the project are opened before credit may be allowed toward the DVBE goal.

It is the Contractor's responsibility to verify that DVBEs are certified;

(o) Noncompliance by the Contractor with these requirements constitutes a breach of this contract and may result in termination of the contract or other appropriate remedy for a breach of this contract.

2-1.03 MBE/WBE/DVBE GOALS FOR THIS PROJECT

The Department has established the following combined goal for Minority Business Enterprise (MBE), Women Business Enterprise (WBE) participation and Disabled Veteran Business Enterprise (DVBE) participation for this project:

Combined MBE/WBE/DVBE goal, 15 percent.

It is the bidder's responsibility to make a sufficient portion of the work available to subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE, WBE and DVBE subcontractors and suppliers, so as to assure meeting the goals for MBE/WBE/DVBE participation.

The Department's Business Enterprise Program may be contacted at (916) 227-9599 for program information and certification status.

2-1.04 SUBMISSION OF MBE/WBE/DVBE INFORMATION

The required MBE, WBE and DVBE information shall be submitted **WITH THE BID** on the following "CALTRANS BIDDER - MBE/WBE/DVBE - INFORMATION" and "TELEPHONE LOG AND LIST OF REJECTED MBEs/WBEs/DVBEs."

It is the bidder's responsibility to meet the goals for MBE, WBE and DVBE participation or to establish that, prior to bidding, the bidder made good faith efforts to do so based on the information in the "CALTRANS BIDDER - MBE/WBE/DVBE - INFORMATION" and "TELEPHONE LOG AND LIST OF REJECTED MBEs/WBEs/DVBEs."

The information to show that the MBE/WBE/DVBE goals will be met on the "CALTRANS BIDDER - MBE/WBE/DVBE - INFORMATION" form shall include the names of MBEs, WBEs, DVBEs and MBE, WBE and DVBE joint venture partners to be used, with a complete description of work or supplies to be provided by each and the dollar value of each such MBE, WBE or DVBE transaction. When 100 percent of a contract item of work is not to be performed or furnished by an MBE, WBE or DVBE, a description of the exact portion of said work to be performed or furnished by that MBE, WBE or DVBE shall be included in the MBE/WBE/DVBE information, including the planned location of said work. (Note: MBE, WBE and DVBE subcontractors to whom the bidder proposes to directly subcontract portions of the work are to be named in the bid. - See Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications and Section 2-1.01, "General," of these special provisions, regarding listing of proposed subcontractors).

A DVBE who is also an MBE or WBE will receive credit for DVBE and MBE goals or DVBE and WBE goals, as the case may be.

If credit for trucking by an MBE, WBE or DVBE trucking broker is shown on the bidder's information as 100 percent of the revenue to be paid by the broker is to be paid to MBE, WBE and DVBE truckers, a "certified roster" of the broker's trucks to be used must be included with the bid. The "certified roster" must indicate that all the trucks are owned by certified MBEs, WBEs and DVBEs and must show the MBE, WBE and DVBE truck numbers, owner's name, Public Utilities Commission Cal-T numbers, and the MBE, WBE and DVBE certification numbers. The roster must indicate that all revenue paid by the broker will be paid to MBEs, WBEs and DVBEs listed on the "certified roster".

If credit for trucking by a trucking broker who is not an MBE, WBE or DVBE is shown in the bidder's information, a "certified roster" of the broker's trucks to be used must be included with the bid. The "certified roster" must indicate that at least 20 percent of the broker's trucks are owned by certified MBEs, WBEs and DVBEs and must show the MBE, WBE and DVBE truck numbers, owner's name, Public Utilities Commission Cal-T numbers, and the MBE, WBE and DVBE certification numbers. The roster must indicate that at least 20 percent of the revenue paid by the broker will be paid to MBEs, WBEs and DVBEs listed on the "certified roster".

Information necessary to establish the bidder's good faith efforts to meet the MBE, WBE and DVBE goals shall be included in the "TELEPHONE LOG AND LIST OF REJECTED MBEs/WBEs/DVBEs" form located in the Proposal and shall include:

1. The names, dates and times of notices of all certified MBEs, WBEs and DVBEs solicited by telephone for this project and the dates, times and methods used for following up initial solicitations to determine with certainty whether the MBEs, WBEs and DVBEs were interested.
2. The names of MBEs, WBEs and DVBEs who submitted bids which were not accepted and the reason for rejection of the MBE's, WBE's or DVBE's bid.

Bidders are cautioned that even though their submittal indicates they will meet the stated MBE, WBE and DVBE goals, their submittal should also include the telephone log and rejected MBE, WBE and DVBE information to protect their eligibility for award of the contract in the event the Department, in its review, finds that the goals have not been met.

It is the bidders responsibility to be available, by phone, both the day of and the day after the bid opening to answer questions and provide good faith effort clarification. The bidder shall also assure that listed MBEs, WBEs and DVBEs are available, by phone, on both days.

If it is found that the goal has not been met, the Department will review the information submitted with the bid to determine the bidder's good faith effort. In the event that the Department determines that a bidder has not made a good faith effort based on the information submitted with the bid and its independent investigation, the Department's decision will be final.

2-1.05 SMALL BUSINESS PREFERENCE

Attention is directed to "Award and Execution of Contract" elsewhere in these special provisions.

Attention is also directed to the Small Business Procurement and Contract Act, Government Code Section 14835, et seq and Title 2, California Code of Regulations, Section 1896, et seq.

Bidders who wish to be classified as a Small Business under the provisions of those laws and regulations, shall be certified as Small Business by the Department of General Services, Office of Small and Minority Business, 1531 "I" Street, Second Floor, Sacramento, CA 95814.

To request Small Business Preference, bidders shall fill out and sign the Request for Small Business Preference form in the Proposal and shall attach a copy of their Office of Small and Minority Business (OSMB) small business certification letter to the form. The bidder's signature on the Request for Small Business Preference certifies, under penalty of perjury, that the bidder is certified as Small Business at the time of bid opening and further certifies, under penalty of perjury, that under the following conditions, at least 50 percent of the subcontractors to be utilized on the project are either certified Small Business or have applied for Small Business certification by bid opening date and are subsequently granted Small Business certification.

The conditions requiring the aforementioned 50 percent level of subcontracting by Small Business subcontractors apply if:

1. The lowest responsible bid for the project exceeds \$100 000; and
2. The project work to be performed requires a Class A or a Class B contractor's license; and
3. Two or more subcontractors will be used.

If the above conditions apply and Small Business Preference is granted in the award of the contract, the 50 percent Small Business subcontractor utilization level shall be maintained throughout the life of the contract.

2-1.06 CALIFORNIA COMPANY PREFERENCE

Attention is directed to "Award and Execution of Contract" of these special provisions.

In accordance with the requirements of Section 6107 of the Public Contract Code, a "California company" will be granted a reciprocal preference for bid comparison purposes as against a nonresident contractor from any state that gives or requires a preference to be given contractors from that state on its public entity construction contracts.

A "California company" means a sole proprietorship, partnership, joint venture, corporation, or other business entity that was a licensed California contractor on the date when bids for the public contract were opened and meets one of the following:

- (1) Has its principal place of business in California.
- (2) Has its principal place of business in a state in which there is no local contractor preference on construction contracts.
- (3) Has its principal place of business in a state in which there is a local contractor construction preference and the contractor has paid not less than \$5000 in sales or use taxes to California for construction related activity for each of the five years immediately preceding the submission of the bid.

To carry out the "California company" reciprocal preference requirements of Section 6107 of the Public Contract Code, all bidders shall fill out and sign the California Company Preference form in the Proposal. The bidder's signature on the California Company Preference form certifies, under penalty of perjury, that the bidder is or is not a "California company" and if not, the amount of the preference applied by the state of the nonresident Contractor.

A nonresident Contractor shall disclose any and all bid preferences provided to the nonresident Contractor by the state or country in which the nonresident Contractor has its principal place of business.

Proposals without the California Company Preference form filled out and signed may be rejected.

2-1.07 ESCROW OF BID DOCUMENTATION

Bid documentation shall consist of all documentary and calculated information generated by the Contractor in preparation of the bid. The bid documentation shall conform to the requirements in these special provisions, and shall be submitted to the Department and held in escrow for the duration of the contract.

In the resolution of disputes involving the project, the escrowed bid documents will be the only documents accepted from the Contractor regarding preparation of the bid.

In signing the proposal, the bidder certifies that the material submitted for escrow constitutes all the documentary information used in preparation of the bid and that he has personally examined the contents of the container and that they are complete.

The bidder shall include with the proposal, the identification of the bidder's representative authorized to present the bid documentation and the persons responsible for preparing the bidder's estimate.

Nothing in the bid documentation shall be construed to change or modify the terms or conditions of the contract.

Escrowed bid documentation will not be used for pre-award evaluation of the Contractor's anticipated methods of construction, nor to assess the Contractor's qualifications for performing the work.

Bid documentation shall clearly itemize the Contractor's estimated costs of performing the work. The documentation submitted shall be complete and so detailed as to allow for an in-depth analysis of the Contractor's estimate.

The bid documentation shall include, but not be limited to: quantity takeoffs; rate schedules for the direct costs and the time- and nontime-related indirect costs for labor (by craft), plant and equipment ownership and operation, permanent and expendable materials, insurance and subcontracted work; estimated construction schedules, including sequence and duration and development of production rates; quotations from subcontractors and suppliers; estimates of field and home office overhead; contingency and margin for each contract item of work; and other reports, calculations and information used by the bidder to arrive at the estimate submitted with the proposal.

The Contractor shall also submit bid documentation for each subcontractor whose total subcontract exceeds \$250,000. Subcontractor bid documentation shall be enclosed with the Contractor's submittal. The examination of subcontractors' bid documentation will be accomplished in the same manner as for the Contractor's bid documentation. If a subcontractor is replaced, bid documentation for the new subcontractor shall be submitted for review and escrow before authorization for the substitution will be granted. Upon request of a subcontractor, the bid documentation from that subcontractor shall be reviewed only by the subcontractor and the Department.

If the bidder is a joint venture, the bid documentation shall include the joint venture agreement, the joint venture estimate comparison and final reconciliation of the joint venture estimate.

Copies of the proposals submitted by the first, second and third low bidders will be provided to the respective bidders for inclusion in the bid documentation to be escrowed.

The first, second, and third apparent low bidders shall present the bid documentation for escrow at the District 04 Office, 111 Grand Avenue, Room 12-816, Oakland, CA, on the first Monday, at 10:00 a.m., following the time indicated in the "Notice to Contractors" for the opening of bids.

Bid documentation shall be submitted in a sealed container, clearly marked with the bidder's name, date of submittal, project contract number and the words, "Bid Documentation for Escrow."

Failure to submit the actual and complete bid documentation as specified herein within the time specified shall be cause for rejection of the proposal.

Upon submittal, the bid documentation of the apparent low bidder will be examined and inventoried by the duly designated representatives of the Contractor and the Department to ensure that the bid documentation is authentic, legible, and in accordance with the terms of this section "Escrow of Bid Documentation." The examination will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The acceptance or rejection by the Department that the submitted bid documents are in compliance with this section "Escrow of Bid Documentation" shall be completed within 48 hours of the time the bid documentation is submitted by the Contractor.

At the completion of the examination, the bid documents will be sealed and jointly deposited at an agreed commercial bank.

Bid documentation submitted by the second and third apparent low bidders will be jointly deposited at agreed commercial banks. If the apparent low bid is withdrawn or rejected, the bid documentation of the second low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. If the second low bid is withdrawn or rejected, the bid documentation of the third low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. Upon execution and final approval of the contract or rejection of all bids, the bid documentation will be returned to any remaining unsuccessful bidders.

The escrowed bid documentation may be examined by the designated representatives of both the Department and the Contractor, at any time deemed necessary by either the Department or the Contractor to assist in the negotiation of price adjustments and change orders, or in the settlement of claims or disputes.

If requested by a Disputes Review Board, the escrowed bid documentation may be utilized to assist the Board in its recommendations.

The bid documentation submitted by the Contractor will be held in escrow until the contract has been completed, the ultimate resolution of all disputes and claims has been achieved and receipt of final payment has been accepted by the Contractor. The escrowed bid documentation will then be released from escrow to the Contractor.

The bid documentation submitted by the bidder is, and shall remain, the property of the bidder, and is subject to only joint review by the Department and the bidder. The Department stipulates and expressly acknowledges that the submitted bid documentation constitutes trade secrets and will not be deemed public records. This acknowledgment is based on the Department's express understanding that the information contained in the bid documentation is not known outside the bidder's business, is known only to a limited extent and only by a limited number of employees of the bidder, is safeguarded while in the bidder's possession, is extremely valuable to the bidder and could be extremely valuable to the bidder's competitors by virtue of it reflecting the bidder's contemplated techniques of construction. The Department acknowledges that the bid documentation includes a compilation of information used in the bidder's business, intended to give the bidder an opportunity to obtain an advantage over competitors who do not know of or use the contents of the

documentation. The Department agrees to safeguard the bid documentation, and all information contained therein, against disclosure, including disclosure of subcontractor bid documentation to the Contractor and other subcontractors to the fullest extent permitted by law. However, in the event of arbitration or litigation, the bid documentation shall be subject to discovery, and the Department assumes no responsibility for safeguarding the bid documentation unless the Contractor has obtained an appropriate protective order issued by the arbitrator or the court.

Full compensation for preparing the bid documentation, presenting it for escrow and reviewing it for escrow and upon request of the Engineer shall be considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

The direct cost of depositing the bid documentation in escrow at the agreed commercial bank will be paid in accordance with Section 9-1.03, "Force Account Payment," of the Standard Specifications. No markups will be added to this direct cost.

SECTION 3. AWARD AND EXECUTION OF CONTRACT

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications, and these special provisions for the requirements and conditions concerning award and execution of contract.

The award of contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goals for MBE/WBE/DVBE participation or has demonstrated, to the satisfaction of the Department, good faith effort to do so. Meeting the goals for MBE/WBE/DVBE participation or demonstrating, to the satisfaction of the Department, good faith efforts to do so is a condition for being eligible for award of contract.

It is anticipated that this contract will be awarded within 10 days after the bid opening.

Each of the two bonds required in Section 3-1.02, "Contract Bonds," of the Standard Specifications shall be in a sum equal to 100 percent of the contract price.

The contract shall be signed by the successful bidder and shall be received with contract bonds by the Department within **4 days**, including Saturdays, Sundays and legal holidays, after the bidder has received notice that the contract has been awarded. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: Department of Transportation, P.O. Box 942874, Sacramento, CA 94274-0001, Attn: Office Engineer (MS 43)- Contracts.

Within 2 days, not including Saturdays, Sundays and legal holidays, of return of the executed contract and bonds, the Department will notify the successful bidder of either approval of the contract by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation, or disapproval of the submittal. Should the Department fail to provide notification within said 2 days, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

A "Vendor Data Record" form will be included in the contract documents to be executed by the successful bidder. The purpose of the form is to facilitate the collection of taxpayer identification data. The form shall be completed and returned to the Department by the successful bidder with the executed contract and contract bonds. For the purposes of the form, vendor shall be deemed to mean the successful bidder. The form is not to be completed for subcontractors or suppliers. Failure to complete and return the "Vendor Data Record" form to the Department as provided herein will result in the retention of 20 percent of payments due the contractor and penalties of up to \$20,000. This retention of payments for failure to complete the "Vendor Data Record" form is in addition to any other retention of payments due the Contractor.

Attention is also directed to "Small Business Preference" of these special provisions. Any bidder who is certified as a Small Business by the Department of General Services, Office of Small and Minority Business will be allowed a preference in the award of this contract, if it be awarded, under the following conditions:

- (1) The apparent low bidder is not certified as a Small Business, or has not filled out and signed the Request for Small Business Preference included with the bid documents and attached a copy of their Office of Small and Minority Business (OSMB) small business certification letter to the form; and
- (2) The bidder filled out and signed the Request for Small Business Preference form included with the bid documents and attached a copy of their Office of Small and Minority Business (OSMB) small business certification letter to the form.

The small business preference will be a reduction in the bid submitted by the small business contractor, for bid comparison purposes, by an amount equal to 5 percent of the amount bid by the apparent low bidder, said amount not to exceed \$50,000. If such reduction results in the small business contractor becoming the low bidder, then the contract will be awarded to said small business contractor on the basis of the actual bid of the small business contractor notwithstanding the reduced bid price used for bid comparison purposes.

Attention is also directed to "California Company Preference" of these special provisions.

The amount of the California company reciprocal preference shall be equal to the amount of the preference applied by the state of the nonresident contractor with the lowest responsive bid, except where the "California company" is eligible for a California Small Business Preference, in which case the preference applied shall be the greater of the two, but not both.

If the bidder submitting the lowest responsive bid is not a "California company" and with the benefit of the reciprocal preference, a "California company's" responsive bid is equal to or less than the original lowest responsive bid, the "California company" will be awarded the contract at its submitted bid price except as provided below.

Small business bidders shall have precedence over nonsmall business bidders in that the application of the "California company" preference for which nonsmall business bidders may be eligible shall not result in the denial of the award to a small business bidder.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work," in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall begin work within 5 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

This work shall be diligently prosecuted to completion before the expiration of

460 WORKING DAYS

beginning at 12:01 a.m. on the **FIRST WORKING DAY AFTER CONTRACT AWARD.**

The Contractor shall pay to the State of California the sum of \$1500 per day, for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed above. The 72 hours advance notice before beginning work as referred to in said Section 8-1.03 is changed to 24 hours advance notice for this project.

A working day as defined in said Section 8-1.06 is re-defined for this project. Subparagraph (a) of the second paragraph in said Section 8-1.06 shall not apply. Saturdays, Sundays and legal holidays, except days of inclement weather, will be counted as working days.

The time limit specified for the completion of the work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. Should the Contractor fail to maintain the progress of the work in accordance with the "Progress Schedule" required in these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the abovementioned schedule and that the work will be completed within the time limit specified.

Full compensation for any additional costs occasioned by compliance with the provisions in this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

Attention is directed to "Maintaining Traffic" elsewhere in these special provisions regarding additional liquidated damages.

SECTION 5. GENERAL

SECTION 5-1. MISCELLANEOUS

5-1.01 LABOR NONDISCRIMINATION

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM (GOV. CODE, SECTION 12990)

Your attention is called to the "Nondiscrimination Clause", set forth in Section 7-1.01A(4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt state contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The Specifications are applicable to all nonexempt state construction contracts and subcontracts of \$5,000 or more.

5-1.02 PREVAILING WAGE

Attention is directed to Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications and these special provisions.

The general prevailing wage rates determined by the Director of Industrial Relations, for the county or counties in which the work is to be done, are available at the Labor Compliance Office at the offices of the District Director of Transportation for the district in which the work is situated. The general prevailing wage rates are also available from the California Department of Industrial Relations' Internet Web Site at: <http://www.dir.ca.gov>. General prevailing wage rates are not included in the Proposal and Contract for the project. Changes, if any, to the general prevailing wage rates will be available at the same locations.

5-1.03 CONTRACTOR'S LICENSING LAWS

The third paragraph of Section 7-1.01C, "Contractor's Licensing Laws," of the Standard Specifications is amended to read:

Attention is also directed to the provisions of Public Contract Code Section 10164. In all projects where Federal funds are involved, the Contractor shall be properly licensed at the time the contract is awarded.

5-1.04 ARBITRATION

The last paragraph in Section 9-1.10, "Arbitration," of the Standard Specifications is amended to read.

Arbitration shall be initiated by a Complaint in Arbitration made in compliance with the requirements of said regulations. A Complaint in Arbitration by the Contractor shall be made not later than 180 days after the date of service in person or by mail on the Contractor of the final written decision by the Department on the claim.

5-1.05 NOTICE OF POTENTIAL CLAIM

Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications is amended to read:

9-1.04 Notice of Potential Claim.--The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a change order, or for the happening of any event, thing, occurrence, or other cause, unless he shall have given the Engineer due written notice of potential claim as hereinafter specified. Compliance with this Section 9-1.04 shall not be a prerequisite as to matters within the scope of the protest provisions in Section 4-1.03, "Changes," or Section 8-1.06, "Time of Completion," or the notice provisions in Section 5-1.116, "Differing Site Conditions," or Section 8-1.07, "Liquidated Damages," or Section 8-1.10, "Utility and Non-Highway Facilities," nor to any claim which is based on differences in measurements or errors of computation as to contract quantities.

The written notice of potential claim shall be submitted to the Engineer prior to the time that the Contractor performs the work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Engineer, or in all other cases within 15 days after the happening of the event, thing, occurrence, or other cause, giving rise to the potential claim.

The written notice of potential claim shall be submitted on Form CEM-6201 furnished by the Department and shall be certified with reference to the California False Claims Act, Government Code Sections 12650 - 12655. The notice shall set forth the reasons for which the Contractor believes additional compensation will or may be due and the nature of the costs involved. Unless the amount of the potential claim has been stated in the written notice, the Contractor shall, within 15 days of submitting said notice, furnish an estimate of the cost of the affected work and impacts, if any, on project completion. Said estimate of costs may be changed or updated by the Contractor when conditions have changed. When the affected work is completed, the Contractor shall submit substantiation of his actual costs. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

It is the intention of this Section 9-1.04 that differences between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was filed.

Should the Contractor, in connection with or subsequent to the assertion of a potential claim, request inspection and copying of documents or records in the possession of the Department that pertain to the potential claim, Contractor shall make its records of the project, as deemed by the Department to be pertinent to the potential claim, available to the Department for inspection and copying.

5-1.06 PARTIAL PAYMENTS

The last paragraph of Section 9-1.06, "Partial Payments," of the Standard Specifications is amended to read:

Attention is directed to the prohibitions and penalties pertaining to unlicensed contractors as provided in Business and Professions Code Sections 7028.15(a) and 7031.

5-1.07 PAYMENT OF WITHHELD FUNDS

Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications, is amended by adding the following after the third paragraph:

Alternatively, and subject to the approval of the Department, the payment of retentions earned may be deposited directly with a person licensed under Division 6 (commencing with Section 17000) of the Financial Code as the escrow agent. Upon written request of an escrow agent that has not been approved by the Department under subdivision (c) of Section 10263 of the Public Contract Code, the Department will provide written notice to that escrow agent within 10 business days of receipt of the request indicating the reason or reasons for not approving that escrow agent. The payments will be deposited in a trust account with a Federally chartered bank or savings association within 24 hours of receipt by the escrow agent. The Contractor shall not place any retentions with the escrow agent in excess of the coverage provided to that escrow agent pursuant to subdivision (b) of Section 17314 of the Financial Code. In all respects not inconsistent with subdivision (c) of Section 10263 of the Public Contract Code, the remaining provisions of Section 10263 of the Public Contract Code shall apply to escrow agents acting pursuant to subdivision (c) of Section 10263 of the Public Contract Code.

5-1.08 FINAL PAYMENT AND CLAIMS

Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications is amended to read:

9-1.07B Final Payment and Claims.--After acceptance by the Director, the Engineer will make a proposed final estimate in writing of the total amount payable to the Contractor, including therein an itemization of said amount, segregated as to contract item quantities, extra work and any other basis for payment, and shall also show therein all deductions made or to be made for prior payments and amounts to be kept or retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the proposed final estimate. The Contractor shall submit written approval of the proposed final estimate or a written statement of all claims arising under or by virtue of the contract so that the Engineer receives such written approval or statement of claims no later than close of business of the thirtieth day after receiving the proposed final estimate. If the thirtieth day falls on a Saturday, Sunday or legal holiday, then receipt of such written approval or statement of claims by the Engineer shall not be later than close of business of the next business day. No claim will be considered that was not included in the written statement of claims, nor will any claim be allowed as to which a notice or protest is required under the provisions in Sections 4-1.03, "Changes," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," 5-1.116, "Differing Site Conditions," 8-1.10, "Utility and Non-Highway Facilities," and 9-1.04, "Notice of Potential Claim," unless the Contractor has complied with the notice or protest requirements in said sections.

On the Contractor's approval, or if he files no claim within said period of 30 days, the Engineer will issue a final estimate in writing in accordance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the State will pay the entire sum so found to be due. Such final estimate and payment thereon shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

If the Contractor within said period of 30 days files claims, the Engineer will issue a semifinal estimate in accordance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the State will pay the sum so found to be due. Such semifinal estimate and payment thereon shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except insofar as affected by the claims filed within the time and in the manner required hereunder and except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

Claims filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said claims. If additional information or details are required by the Engineer to determine the basis and amount of said claims, the Contractor shall furnish such further information or details so that the information or details are received by the Engineer no later than the fifteenth day after receipt of the written request from the Engineer. If the fifteenth day falls on a Saturday, Sunday or legal holiday, then receipt of such information or details by the Engineer shall not be later than close of business of the next business day. Failure to submit such information and details to the Engineer within the time specified will be sufficient cause for denying the claim.

The Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated claim investigator or auditor shall have access to those records and any other records as may be required by the Engineer to determine the facts or

contentions involved in the claims. Failure to permit access to such records shall be sufficient cause for denying the claims.

Claims submitted by the Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code Section 12650 et. seq., the undersigned,

(name) _____ of

(title)

(company)

hereby certifies that the claim for the additional compensation and time, if any, made herein for the work on this contract is a true statement of the actual costs incurred and time sought, and is fully documented and supported under the contract between parties.

Dated _____

/s/ _____

Subscribed and sworn before me this _____ day

of _____

Notary Public
My Commission Expires _____

Failure to submit the notarized certificate will be sufficient cause for denying the claim.

Any claim for overhead type expenses or costs, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant. Any such overhead claim shall also be subject to audit by the State at its discretion.

Any costs or expenses incurred by the State in reviewing or auditing any claims that are not supported by the Contractor's cost accounting or other records shall be deemed to be damages incurred by the State within the meaning of the California False Claims Act.

The District Director of the District which administers the contract will make the final determination of any claims which remain in dispute after completion of claim review by the Engineer. A board or person designated by said District Director will review such claims and make a written recommendation thereon to the District Director. The Contractor may meet with the review board or person to make a presentation in support of such claims.

Upon final determination of the claims, the Engineer will then make and issue his final estimate in writing and within 30 days thereafter the State will pay the entire sum, if any, found due thereon. Such final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

5-1.09 PUBLIC SAFETY

The Contractor shall provide for the safety of traffic and the public in accordance with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications and these special provisions.

The Contractor shall install temporary railing (Type K) between any lane carrying public traffic and any excavation, obstacle, or storage area when the following conditions exist:

(1) Excavations.--Any excavation, the near edge of which is 12 feet or less from the edge of the lane, except:

- (a) Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
- (b) Excavations less than one foot deep.

- (c) Trenches less than one foot wide for irrigation pipe or electrical conduit, or excavations less than one foot in diameter.
- (d) Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
- (e) Excavations in side slopes, where the slope is steeper than 4:1.
- (f) Excavations protected by existing barrier or railing.

(2) Temporarily Unprotected Permanent Obstacles.--Whenever the work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or whenever the Contractor, for his convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.

(3) Storage Areas.--Whenever material or equipment is stored within 12 feet of the lane and such storage is not otherwise prohibited by the specifications.

The approach end of temporary railing (Type K), installed in accordance with the requirements in this section "Public Safety" and in Section 7-1.09, "Public Safety," of the Standard Specifications shall be offset a minimum of 15 feet from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than one foot transversely to 10 feet longitudinally with respect to the edge of the traffic lane. If the 15-foot minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Temporary railing (Type K) shall conform to the provisions in Section 12-3.08, "Temporary Railing (Type K)" of the Standard Specifications, except temporary railing (Type K) fabricated prior to January 1, 1993, with one longitudinal No. 5 reinforcing steel bar near the top in lieu of the 2 longitudinal No. 5 reinforcing steel bars near the top, as shown on the plans, may be used.

Temporary crash cushion modules shall conform to the provisions in "Temporary Crash Cushion Module" elsewhere in these special provisions.

Except for installing, maintaining and removing traffic control devices, whenever work is performed or equipment is operated in the following work areas the Contractor shall close the adjacent traffic lane unless otherwise provided in the specifications:

| Approach speed of public traffic (Posted Limit) (Miles Per Hour) | Work Areas |
|---|--|
| Over 45 | Within 6 feet of a traffic lane but not on a traffic lane. |
| 35 to 45 | Within 3 feet of a traffic lane but not on a traffic lane. |

The lane closure provisions of this section shall not apply if the work area is protected by permanent or temporary railing or barrier.

When traffic cones or delineators are used to delineate a temporary edge of traffic lane, the line of cones or delineators shall be considered to be the edge of traffic lane, however, the Contractor shall not reduce the width of an existing lane to less than 10 feet without written approval from the Engineer.

When work is not in progress on a trench or other excavation that required closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Suspended loads or equipment shall not be moved nor positioned over public traffic or pedestrians.

Full compensation for conforming to the requirements in this section "Public Safety," including furnishing and installing temporary railing (Type K) and temporary crash cushion modules, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

5-1.10 SURFACE MINING AND RECLAMATION ACT

Attention is directed to the Surface Mining and Reclamation Act of 1975, commencing in Public Resources Code, Mining and Geology, Section 2710, which establishes regulations pertinent to surface mining operations.

Material from mining operations furnished for this project shall only come from permitted sites in compliance with the Surface Mining and Reclamation Act of 1975.

The requirements of this section shall apply to all materials furnished for the project, except for acquisition of materials in conformance with Section 4-1.05, "Use of Materials Found on the Work," of the Standard Specifications.

5-1.11 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe, and shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In accordance with Section 25914.1 of the Health and Safety Code, all such removal of asbestos or hazardous substances including any exploratory work to identify and determine the extent of such asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for such delay as provided in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

5-1.12 FINAL PAY QUANTITIES

Section 9-1.015, "Final Pay Quantities," of the Standard Specifications is amended to read:

9-1.015 Final Pay Items.—When an item of work is designated as (F) or (S-F) in the Engineer's Estimate, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions, except as otherwise provided for minor structures in Section 51-1.22, "Measurement." If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

The estimated quantity for each item of work designated as (F) or (S-F) in the Engineer's Estimate shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity.

In case of discrepancy between the quantity shown in the Engineer's Estimate for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Engineer's Estimate.

5-1.13 YEAR 2000 COMPLIANCE

This contract is subject to Year 2000 Compliance for automated devices in the State of California. Year 2000 compliance is defined as follows:

Year 2000 compliance for automated devices in the State of California is achieved when embedded functions have or create no logical or mathematical inconsistencies when dealing with dates prior to and beyond 1999. The year 2000 is recognized and processed as a leap year. The product must also operate accurately in the manner in which it was intended for date operation without requiring manual intervention.

The Contractor shall provide the Engineer a Certificate of Compliance from the manufacturer in accordance with the provisions of Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for all automated devices furnished for the project.

5-1.135 BUY AMERICA REQUIREMENTS

Attention is directed to the "Buy America" requirements of the Surface Transportation Assistance Act of 1982 (Section 165) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) Sections 1041(a) and 1048(a), and the regulations adopted pursuant thereto. In accordance with said law and regulations, all manufacturing processes for steel and iron materials furnished for incorporation into the work on this project shall occur in the United States; with the exception that pig iron and processed, pelletized and reduced iron ore manufactured outside of the United States may be used in the domestic manufacturing process for such steel and iron materials. The application of coatings, such as epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of such steel or iron materials shall be considered a manufacturing process subject to the "Buy America" requirements.

A Certificate of Compliance, conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications, shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall also specifically certify that all manufacturing processes for the materials occurred in the United States, except for the exceptions allowed herein.

The requirements imposed by said law and regulations do not prevent a minimal use of foreign steel and iron materials if the total combined cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract cost or \$2,500, whichever is greater. The Contractor shall furnish the Engineer acceptable documentation of the quantity and value of any foreign steel and iron prior to incorporating such materials into the work.

5-1.14 MBE, WBE AND DVBE RECORDS

The Contractor shall maintain records of all subcontracts entered into with certified MBE, WBE or DVBE subcontractors and records of materials purchased from certified MBE, WBE or DVBE suppliers. Such records shall show the name and business address of each MBE, WBE or DVBE subcontractor or vendor and the total dollar amount actually paid each MBE, WBE or DVBE subcontractor or vendor.

Upon completion of the contract, a summary of these records shall be prepared on Form CEM-2402 and certified correct by the Contractor or his authorized representative, and shall be furnished to the Engineer.

5-1.145 PERFORMANCE OF MBE, WBE AND DVBE SUBCONTRACTORS AND SUPPLIERS

The MBEs, WBEs and DVBEs listed by the Contractor in response to the requirements in Section 2-1.04, "Submission of MBE/WBE/DVBE Information," in these special provisions, which are determined by the Department to be certified MBEs, WBEs or DVBEs, shall perform the work and supply the materials for which they are listed unless the Contractor has received prior written authorization to perform the work with other forces or to obtain the materials from other sources.

Authorization to utilize other forces or sources of materials may be requested for the following reasons:

1. The listed MBE, WBE or DVBE, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract, when such written contract, based upon the general terms, conditions, plans and specifications for the project, or on the terms of such subcontractor's or supplier's written bid, is presented by the Contractor.
2. The listed MBE, WBE or DVBE becomes bankrupt or insolvent.
3. The listed MBE, WBE or DVBE fails or refuses to perform his subcontract or furnish the listed materials.
4. The Contractor stipulated that a bond was a condition of executing a subcontract and the listed MBE, WBE or DVBE subcontractor fails or refuses to meet the bond requirements of the Contractor.
5. The work performed by the listed subcontractor is substantially unsatisfactory and is not in substantial accordance with the plans and specifications, or the subcontractor is substantially delaying or disrupting the progress of the work.
6. It would be in the best interest of the State.

The Contractor shall not be entitled to any payment for such work or material unless it is performed or supplied by the listed MBE, WBE or DVBE or by other forces (including those of the Contractor) pursuant to prior written authorization of the Engineer.

If a trucking broker, who is not an MBE, WBE or DVBE but was listed for MBE, WBE or DVBE credit in the Contractor's MBE/WBE/DVBE information, fails to pay at least 20 percent to the MBEs, WBEs or DVBEs listed on the broker's "certified roster", the broker will no longer be eligible for MBE, WBE or DVBE credit for one year.

If an MBE, WBE or DVBE trucking broker was listed for MBE, WBE or DVBE credit in the Contractor's MBE/WBE/DVBE information on the basis of the broker's signed agreements with MBE, WBE or DVBE truckers that the trucking will be performed by certified MBE, WBE or DVBE truckers and if all the revenue paid by the broker is not paid to the MBEs, WBEs or DVBEs listed on the broker's "certified roster", the broker will no longer be eligible for 100 percent MBE, WBE or DVBE credit for one year.

The Contractor shall include the above information in the agreements made with trucking brokers so that brokers will be aware that they may become ineligible for MBE, WBE and DVBE credit.

The Contractor shall submit monthly documentation to the Engineer that shows the amount paid to MBE, WBE and DVBE truckers under trucking brokers listed in the Contractor's MBE/WBE/DVBE information. The records must confirm that no less than 20 percent was paid to MBE, WBE or DVBE truckers by brokers who are not MBEs, WBEs or DVBEs and that all the revenue paid by MBE, WBE or DVBE brokers was paid to MBE, WBE or DVBE truckers if the Contractor indicated in the MBE/WBE/DVBE information that the broker had signed agreements with MBE, WBE or DVBE truckers that the trucking will be performed by MBE, WBE or DVBE truckers.

5-1.15 SUBCONTRACTING

Attention is directed to the provisions in Section 8-1.01, "Subcontracting," of the Standard Specifications, Section 2, "Proposal Requirements and Conditions," Section 2-1.04, "Submission of MBE/WBE/DVBE Information," and Section 3, "Award and Execution of Contract," elsewhere in these special provisions and these special provisions.

The second sentence in the third paragraph of said Section 8-1.01 is amended to read:

When items of work in the Engineer's Estimate are preceded by the letters (S) or (S-F), said items are designated as "Specialty Items."

The MBE, WBE and DVBE information furnished under Section 2-1.04, "Submission of MBE/WBE/DVBE Information," of these special provisions is in addition to the subcontractor information required to be furnished under said Section 8-1.01, "Subcontracting," and Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications.

Section 10115 of the Public Contract Code requires the Department to implement provisions to establish goals for Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE) participation in highway contracts that are state funded. As a part of this requirement:

1. No substitution of an MBE, WBE or DVBE subcontractor shall be made at any time without the written consent of the Department, and
2. If an MBE, WBE or DVBE subcontractor is unable to perform successfully and is to be replaced, the Contractor will be required to make good faith efforts to replace the original MBE, WBE or DVBE subcontractor with another MBE, WBE or DVBE subcontractor.

The requirement in Section 2-1.02, "Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE)," of these special provisions that MBEs, WBEs and DVBEs must be certified on the date bids are opened does not apply to MBE, WBE and DVBE substitutions after award of the contract.

5-1.16 PARTNERING

The State will promote the formation of a "Partnering" relationship with the Contractor in order to effectively complete the contract to the benefit of both parties. The purpose of this relationship will be to maintain cooperative communication and mutually resolve conflicts at the lowest possible management level.

The Contractor may request the formation of such a "Partnering" relationship by submitting a request in writing to the Engineer after approval of the contract. If the Contractor's request for "Partnering" is approved by the Engineer, scheduling of a "Partnering" workshop, selecting the "Partnering" facilitator and workshop site, and other administrative details shall be as agreed to by both parties.

The costs involved in providing a facilitator and a workshop site will be borne equally by the State and the Contractor. The Contractor shall pay all compensation for the wages and expenses of the facilitator, and of the expenses for obtaining the workshop site. The State's share of such costs will be reimbursed to the Contractor in a change order written by the Engineer. Markups will not be added. All other costs associated with the "Partnering" relationship will be borne separately by the party incurring the costs.

The establishment of a "Partnering" relationship will not change or modify the terms and conditions of the contract and will not relieve either party of the legal requirements of the contract.

5-1.17 DISPUTES REVIEW BOARD

To assist in the resolution of disputes or potential claims arising out of the work of this project, a Disputes Review Board, hereinafter referred to as the "DRB", shall be established, unless the Contractor, within 45 days of approval of the contract, either submits a written statement to the Engineer indicating the Contractor's unwillingness to participate in a DRB and outlining the reasons therefor or fails to take action for establishment of the DRB as hereinafter provided. The DRB is intended to assist the contract administrative claims resolution process as set forth in the provisions of Section 9-1.04, "Notice of Potential Claim," and Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications as amended elsewhere in these special provisions. The DRB shall not serve as a substitute for any requirements in the Standard Specifications nor any requirements elsewhere in these special provisions.

If the DRB is established, the DRB shall be utilized when dispute or potential claim resolution at the job level is unsuccessful. Once established, the DRB shall function until the day of acceptance of the contract unless terminated earlier by either the State or the Contractor as provided in the Disputes Review Board Agreement. On the day of acceptance of the contract or if the DRB is terminated earlier, the work of the DRB will cease except for completion of unfinished dispute hearings and reports. After acceptance of the contract or termination of the DRB, any disputes or potential claims that the Contractor wants to pursue, including disputes previously submitted to the DRB but unresolved, must be stated or restated in response to the Proposed Final Estimate within the time limits provided in Section 9-1.07B of the Standard Specifications as amended elsewhere in these special provisions. The State will review such claims in accordance with Section 9-1.07B, as amended. Following the completion of the State's administrative claims procedure, the Contractor may resort to arbitration as provided in Section 9-1.10, "Arbitration," of the Standard Specifications.

Disputes, as used in this section, shall include all differences of opinion, properly noticed as provided hereinafter, between the State and Contractor on matters related to the work and other subjects considered by the State or Contractor,

or by both, to be of concern to the DRB on this project. Whenever the term "dispute" or "disputes" is used herein, it shall be deemed to include potential claims as well as disputes.

The DRB shall serve as an advisory body to assist in the resolution of disputes between the State and the Contractor, hereinafter referred to as the "parties". The DRB shall consider disputes referred to it, and furnish written reports containing findings and recommendations pertaining to those disputes, to the parties to aid in resolution of the differences between them. DRB findings and recommendations are not binding on the parties.

The DRB shall consist of one member selected by the State, one member selected by the Contractor, and a third member selected by the first 2 members and approved by both the State and the Contractor. The third member shall act as DRB Chairperson.

The first 2 DRB members shall select a third DRB member subject to the mutual approval of the parties, or may mutually concur on a list of potentially acceptable third DRB members and submit the list to the parties for final selection and approval of the third member. The goal in selection of the third member is to complement the professional experience of the first 2 members, and to provide leadership for the DRB's activities.

No DRB member shall have prior direct involvement in this contract, and no member shall have a financial interest in this contract or the parties thereto, within a period of 6 months prior to award of this contract, or during the contract, except as follows:

1. Compensation for services on this DRB.
2. Ownership interest in a party or parties, documented by the prospective DRB member, that has been reviewed and determined in writing by the State to be sufficiently insignificant to render the prospective member acceptable to the State.
3. Service as a member of other Disputes Review Boards on other contracts.
4. Retirement payments or pensions received from a party that are not tied to, dependent on or affected by the net worth of the party.

The above provisions apply to any party having a financial interest in this contract; including but not limited to contractors, subcontractors, suppliers, consultants, and legal and business services.

DRB members shall be especially knowledgeable in the type of construction and contract documents potentially anticipated by the contract, and shall discharge their responsibilities impartially and as an independent body considering the facts and circumstances related to the matters under consideration, applicable laws and regulations, and the pertinent provisions of the contract.

The State and the Contractor shall select their respective DRB members, in accordance with the terms and conditions of the Disputes Review Board Agreement and these special provisions, within 45 days of the approval of the contract unless a written statement declining to participate in the DRB has been submitted by the Contractor. Each party shall provide written notification to the other of the name of their selected DRB member along with the prospective member's written disclosure statement as provided below. Failure of the Contractor to select a DRB member and provide the required written notification and disclosure statement within the time specified above shall be considered as rejection of the DRB, and no DRB will be established for this contract. A copy of a Disputes Review Board Agreement, Form Cem-6202, to be completed by the Contractor, the State, and the DRB members after award of the contract if the Contractor elects to establish a DRB for this project, is included in the "Proposal and Contract" book.

Before their appointments are final, the first 2 prospective DRB members shall submit complete disclosure statements to their appointing party. The statement shall include a resume of the prospective member's experience, together with a declaration describing all past, present and anticipated or planned future relationships, including indirect relationships through the prospective member's primary or full-time employer, to this project and with all parties involved in this construction contract; including, but not limited to, any relevant subcontractors or suppliers to the parties, the parties' principals or the parties' counsel. Disclosure of close professional or personal relationships with all key members of all parties to the contract shall be included. The third DRB member shall supply such a statement to the first 2 DRB members and to the parties prior to appointment. Failure of any of the 3 prospective DRB members to fully comply with all required employment and financial conditions of DRB membership as described in the Disputes Review Board Agreement and elsewhere herein shall constitute sufficient grounds for rejection of the prospective member by either party.

The first duty of the State and Contractor selected members of the DRB is to select and recommend prospective third member(s) to the parties for final selection and approval. The first 2 DRB members shall proceed with the selection of the third DRB member immediately upon receiving written notification from the State of their selection, and shall provide their recommendation simultaneously to the parties within 14 days of the notification.

In the event of an impasse in selection of the third DRB member, the State and the Contractor shall each propose 3 candidates for the third position. All candidates proposed under this paragraph shall be selected from the current list of arbitrators certified by the Public Works Contract Arbitration Committee created by Article 7.2 (commencing with Section 10245) of the State Contract Act. The first 2 DRB members shall then select one of the 6 proposed candidates in a blind draw. An impasse shall be considered to have been reached if the parties are unable to approve a third member

within 14 days of receipt of the recommendation of the first 2 DRB members, or if the first 2 members are unable to agree upon a recommendation within the 14 day time limit allowed in the preceding paragraph.

The Contractor, the State, and all 3 members of the DRB shall execute the Disputes Review Board Agreement within 14 days of selection of the third member. The Disputes Review Board Agreement, Form CEM-6202 prepared by the Department, shall be executed and adhered to in administration of this DRB. The Engineer shall be the person authorized by the State to execute and administer the terms of the Agreement. The person(s) designated by the Contractor as authorized to execute Contract Change Orders shall be authorized to execute and administer the terms of this agreement, or delegate such authority in writing. The operation of the DRB will be in conformance with the terms of the Disputes Review Board Agreement.

The compensation and expenses of the DRB shall be borne equally by the State and the Contractor. The State will provide, at no cost to the Contractor, administrative services such as conference facilities and secretarial services to the DRB. Compensation and expenses of the DRB shall be as provided in the Disputes Review Board Agreement. All DRB members shall be compensated at the same hourly rate. The Contractor shall pay all compensation for the wages and expenses of the DRB. The State's share of such costs will be reimbursed to the Contractor in a change order written by the Engineer. There will be no markups applied to any expenses connected with the DRB, either by the DRB members or by the Contractor when requesting payment of the State's share of DRB expenses.

Service of a DRB member may be terminated at any time with not less than 14 days notice as follows:

1. The State may terminate service of the State appointed member.
2. The Contractor may terminate service of the Contractor appointed member.
3. The third member's services may be terminated only by agreement of the other 2 members.
4. By resignation of a member.

Termination of a member will be followed by appointment of a replacement as specified below. Changes in either of the DRB members chosen by the 2 parties will not require reselection of the third member, unless both parties agree to such reselection in writing.

When a member of the DRB is replaced, the replacement member shall be appointed in the same manner as the replaced member was appointed. The appointment of a replacement DRB member will begin promptly upon determination of the need for replacement and shall be completed within 14 days. The Disputes Review Board Agreement will be amended to reflect the change of a DRB member.

The following procedure shall be used for dispute resolution:

1. If the Contractor objects to any decision, act or order of the Engineer, the Contractor shall give written notice of potential claim as specified in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications, as amended elsewhere in these special provisions, including provision of applicable cost documentation; or file written protests or notices pursuant to Sections 4-1.03A, "Procedure and Protest," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," or 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications.
2. The Engineer will respond, in writing, to the Contractor's written protest or notice within 14 days of receipt of the written protest or notice.
3. Within 14 days after receipt of the Engineer's written response, the Contractor shall, if the Contractor still objects, file a written reply with the Engineer, stating clearly and in detail the basis of the objection.
4. Following the Contractor's objection to the Engineer's decision, the dispute can be referred to the DRB by either the State or the Contractor. Such referral shall be made in writing to the DRB, simultaneously copied to the other party, within 14 days after receipt of the Contractor's written reply to the Engineer. The written dispute referral shall describe the disputed matter in individual discrete segments such that it will be clear to both parties and the DRB what discrete elements of the dispute have been resolved, and which remain unresolved.
5. The Contractor and the State shall each be afforded an opportunity to be present and to be heard by the DRB, and to offer evidence. Either party furnishing any written evidence or documentation to the DRB must furnish copies of such information to the other party a minimum of 14 days prior to the date the DRB is scheduled to convene the hearing for the dispute. Either party shall produce such additional evidence as the DRB may deem necessary to reach an understanding and determination of the dispute. The party furnishing additional evidence shall furnish copies of such additional evidence to the other party at the same time the evidence is provided to the DRB. The DRB will not consider any evidence not furnished in accordance with the terms specified herein.
6. The DRB's report, containing findings and recommendations as described in the Disputes Review Board Agreement, will be furnished in writing to both the State and the Contractor. DRB reports, including minority opinion if any, shall be completed and submitted to the parties within 30 days of the DRB hearing, except that time extensions may be granted at the request of the DRB by written concurrence of both parties. The report will consider the facts and circumstances related to the matters under consideration, applicable laws and regulations, the pertinent provisions of the Contract and the actual costs and time incurred as shown on the

Contractor's cost accounting records. The provisions of Section 9-1.03, "Force Account Payment", of the Standard Specifications should be utilized by the DRB only when appropriate under the contract provisions.

7. Within 30 days of receiving the DRB's report, both the State and the Contractor shall respond to the DRB in writing signifying that the dispute is either resolved or remains unresolved. Failure to provide such written response within the time specified, or a written rejection of the DRB's recommendation presented in the report by either party, will result in the reversion of the subject dispute to the administrative claims resolution process specified in the contract. Immediately after responses have been received by both parties, the DRB will provide copies of both responses to the parties simultaneously. Either party may request clarification of elements of the DRB's report from the DRB prior to responding to the report. Any such request will be considered by the DRB only if submitted within 10 days of receipt of the DRB's report, and shall be submitted simultaneously in writing to both the DRB and the other party. Only one request for clarification will be allowed from each party for any individual DRB report. The DRB shall respond, in writing, to requests for clarification within 10 days of receipt of such requests.
8. The DRB's recommendations, stated in the DRB's reports, are not binding on either party. Either party may appeal a recommendation of the DRB back to the DRB for reconsideration. Reconsiderations shall only be allowed when there is new evidence to present. Any such appeal will be considered by the DRB only if submitted within the 30 day time limit specified for response to the DRB's written report. Each party may submit only one appeal regarding any individual DRB recommendation.
9. If the State and the Contractor are able to resolve their dispute with the aid of the DRB's report, the State and Contractor shall promptly accept and implement the recommendations of the DRB.
10. No members who served on the DRB for this contract may be called as witnesses in arbitration proceedings which may arise from this contract, and all documents created by the DRB shall be inadmissible as evidence in subsequent arbitration proceedings, except the DRB's final written reports and minority reports on each issue brought before it.
11. A rejection of the DRB recommendation by either party may be considered by an arbitrator in any subsequent arbitration as grounds for awarding costs and reasonable attorney's fees to the prevailing party, as provided in Public Contract Code Section 10240.13.
12. The State and Contractor shall jointly indemnify and hold harmless the DRB members from and against all claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of and resulting from the findings and recommendations of the DRB.
13. The DRB members shall have no claim against the State or the Contractor, or both, from any claimed harm arising out of the parties' evaluations of the DRB's report.

5-1.18 COST REDUCTION INCENTIVE

Attention is directed to Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications.

Cost reduction proposals which require re-design or analysis by the Engineer, regarding structural design details specific to the bridge retrofit work, will not be considered.

Cost reduction proposals involving modifications to other work, or to any construction sequence shown on the plans or specified in the special provisions, which do not jeopardize the structural integrity of the bridge at any time or do not affect the retrofit design of the bridge, as determined by the Engineer, may be considered.

Prior to preparing a cost reduction proposal for other work or construction sequence, the Contractor shall request a meeting with the Engineer to discuss the proposal in concept and determine whether the cost reduction proposal will be considered. Items of discussion will also include permit issues, impact on other projects, impact on the project schedule, and review times required by the Department and other agencies.

5-1.19 USE OF DREDGED MATERIALS

If sand, gravel, aggregates, imported borrow or other minerals are dredged from San Francisco Bay, the Contractor shall provide documentation that a permit from the Bay Conservation and Development Commission (BCDC) has been obtained. The documentation shall include the permit number, parcel number and specific location of the source of the material. The Contractor must also include this information on the HC-30 "Notice of Materials to be Used".

5-1.20 FORCE ACCOUNT PAYMENT

The second, third and fourth paragraphs of Section 9-1.03A, "Work Performed by Contractor," of the Standard Specifications, shall not apply.

To the total of the direct costs computed as provided in Sections 9-1.03A(1), "Labor," 9-1.03A(2), "Materials," and 9-1.03A(3), "Equipment Rental," of the Standard Specifications, there will be added a markup of 25 percent to the cost of labor, 10 percent to the cost of materials, and 10 percent to the equipment rental.

The above markups, together with payments made for time related overhead pursuant to "Overhead" of these special provisions, shall constitute full compensation for all overhead costs for work performed on a force account basis. These overhead costs shall be deemed to include all items of expense not specifically designated as cost or equipment rental in Sections 9-1.03A(1), "Labor," 9-1.03A(2), "Materials," and 9-1.03A(3), "Equipment Rental," of the Standard Specifications. The total payment made as provided above and in the first paragraph of Section 9-1.03A, "Work Performed by Contractor," shall be deemed to be the actual cost of the work performed on a force account basis, and shall constitute full compensation therefor.

When extra work to be paid for on a force account basis is performed by a subcontractor, approved in accordance with the provisions in Section 8-1.01, "Subcontracting," of the Standard Specifications, an additional markup of 5 percent will be added to the total cost of said extra work including all markups specified in this section "Force Account Payment". Said additional 5 percent markup shall reimburse the Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

5-1.21 OVERHEAD

The Contractor will be compensated for overhead in accordance with these special provisions.

Attention is directed to "Force Account Payment" and "Progress Schedule (Critical Path)" of these special provisions.

Section 9-1.08, "Adjustment of Overhead Costs," of the Standard Specifications shall not apply.

Time related overhead shall consist of those overhead costs, including field and home office overhead, that are in proportion to the time required to complete the work.

The quantity of time related overhead to be measured for payment will be the number of working days specified in "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions, adjusted only as a result of suspensions and adjustments of time which revise the current contract completion date and which are also any of the following:

- 1) suspensions of work ordered in accordance with Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications, except:
 - a) suspensions ordered due to the failure on the part of the Contractor to carry out orders given, or to perform any provision of the contract; and
 - b) suspensions ordered due to unsuitable weather conditions;
- 2) extensions of time granted by the State in accordance with the provisions of the fifth paragraph of Section 8-1.07, "Liquidated Damages," of the Standard Specifications; or
- 3) reductions in contract time set forth in approved contract change orders, in accordance with Section 4-1.03, "Changes," of the Standard Specifications.

The contract price paid for time related overhead shall include full compensation for time related overhead measured for payment as specified above, incurred by the Contractor and by any joint venture partner, subcontractor, supplier or other party associated with the Contractor.

No adjustment in compensation will be made for any increase or decrease in the quantities of time related overhead required, regardless of the reason for the increase or decrease. The provisions in Sections 4-1.03B, "Increased or Decreased Quantities" and 4-1.03C, "Changes in Character of the Work," of the Standard Specifications, shall not apply to time related overhead.

For progress payment purposes, the number of working days to be paid for time related overhead in each monthly estimate will be the number of working days specified above to be measured for payment that the Contractor performed work on the current controlling operation or operations as specified in Section 8-1.06, "Time of Completion," of the Standard Specifications. Working days specified above to be measured for payment, on which the Contractor did not perform work on the controlling operation or operations will be measured and included for payment in the first estimate made in accordance with Section 9-1.07, "Payment After Acceptance," of the Standard Specifications.

Full compensation for overhead other than time related overhead measured and paid for as specified above, and other than overhead costs for extra work performed pursuant to Section 4-1.03D of the Standard Specifications, shall be considered as included in the various items of work and no additional compensation will be allowed therefor.

5-1.22 PAYMENTS

Attention is directed to Section 9-1.06, "Partial Payments," and 9-1.07, "Payment After Acceptance," of the Standard Specifications and these special provisions.

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications, the amount set forth for the contract items of work hereinafter listed shall be deemed to be the maximum value of said contract item of work which will be recognized for progress payment purposes.

Electronic Mobile Daily Diary Computer System \$105,000.

After acceptance of the contract pursuant to Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes hereinabove listed for said item, will be included for payment in the first estimate made after acceptance of the contract.

In determining the partial payments to be made to the Contractor, only the following listed materials will be considered for inclusion in said payment as materials furnished but not incorporated in the work:

Bar Reinforcing Steel
Structural Steel

Structural steel fabricated and stored outside of the State of California or the United States will be eligible for partial payment if the Contractor furnishes evidence satisfactory to the Engineer that its storage is subject to or under the control of the Department and that it has been fabricated specifically for this project and is of such character that is not adaptable to any other use.

5-1.23 RELATIONS WITH THE DIVISION OF MINES AND GEOLOGY

The Contractor shall notify the Office of Strong Motion Studies, Division of Mines and Geology (DMG), address: 801 K Street, MS 13-35, Sacramento, California 95814-3531, telephone no.: (916) 322-9302, two-weeks before performing any work affecting the seismic sensors mounted on the vertical truss members at piers E4, E9, and E23.

The DMG will disconnect the sensors and related equipment during the above-mentioned two-week period and will remount them upon notification by the Contractor when retrofit work affecting the sensors is completed.

The seismic sensors will not be disconnected for more than one week. . At least one of the three sensors must remain operational at all times.

5-1.24 RELATIONS WITH THE U.S. NAVY

A portion of the San Francisco-Oakland Bay Bridge Seismic Retrofit is within an area controlled by the US Navy. The Contractor shall fully inform himself of all rules, regulations and conditions that may govern his operations in said area and shall conduct his work accordingly.

Attention is directed to Sections 7-1.11, "Preservation of Property," and 7-1.12, "Responsibility for Damage," of the Standard Specifications.

The Contractor shall give the U.S. Navy, address: Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, CA 94066-5006, telephone: (415) 244-3001, a 24-hour notice before performing flagging on Macalla Road on Yerba Buena Island

The pedestrian stairway near Pier YB2 must remain accessible at all times.

No clearing of vegetation is allowed on Yerba Buena Island.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract prices paid for the various items of work involved and no separate payment will be made therefor.

5-1.25 RELATIONS WITH CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

The location of the San Francisco-Oakland Bay Bridge Seismic Retrofit is within an area controlled by the Regional Water Quality Control Board. Regional Water Quality Control Board Order No. 94-098 has been issued covering work to be performed under this contract. The Contractor shall fully inform himself of all rules, regulations and conditions that may govern his operations in said area and shall conduct his work accordingly.

Copies of the agreement may be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, Transportation Building, 1120 N Street, P.O. Box 942874, Sacramento, California 94274-0001, Telephone No. (916)654-4490, and are available for inspection at the office of the District Director of Transportation at 111 Grand Avenue, Oakland, CA 94612.

Attention is directed to Sections 7-1.11, "Preservation of Property," and 7-1.12, "Responsibility for Damage," of the Standard Specifications.

Any change in the Order conditions proposed by the Contractor shall be submitted to the Engineer for transmittal to the Regional Water Quality Control Board for their approval. Changes shall not be implemented until approved in writing by the Regional Water Quality Control Board.

Attention is directed to Section 8-1.06, "Time of Completion," of the Standard Specifications. Days when the Contractor's operations are restricted by the requirements of this section, shall not be considered to be nonworking days whether or not the controlling operation is delayed.

5-1.26 RELATIONS WITH THE U.S. COAST GUARD

The location of the existing bridge retrofit work is adjacent to and across a navigable channel which is under the jurisdiction of the U.S. Coast Guard Eleventh District, Coast Guard Island, Alameda, CA 94501-5100.

A U.S. Coast Guard Preconstruction Checklist has been issued covering work to be performed under this contract. The Contractor shall fully inform himself of all rules, regulations and conditions that may govern his operations in said area and shall conduct his work accordingly.

A copy of the Checklist may be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, Transportation Building, 1120 N Street, P.O. Box 942874, Sacramento, California 94274-0001, Telephone No. (916)654-4490, and are available for inspection at the office of the Toll Bridge Program Duty Senior, Department of Transportation - District 4, 111 Grand Avenue, Oakland, California 94612-3717, Telephone No. (510) 286-5549.

Attention is directed to Sections 7-1.01, "Laws To Be Observed," and 7-1.11, "Preservation of Property," of the Standard Specifications.

The Contractor shall comply with all requirement of the U.S. Coast Guard with regard to the manner in which he conducts his operations and disposes of material. Any restriction of the channel and all navigation and warning lights shall be in accordance with regulations and subject to the approval of the U.S. Coast Guard.

Material from the work shall not be disposed of in the channel.

The Contractor shall keep proper warning lights each night between the hours of sunset and sunrise upon all floating equipment and falsework connected with the work and upon all buoys which are of a size and in such location as to endanger or obstruct navigation.

All work shall be so conducted that the free navigation of the waterway shall not be interfered with and the present navigable depths and channel width shall not be impaired.

All floating equipment and anchors must be marked in accordance with Coast Guard Regulation CG-169.

The Contractor shall give the U.S. Coast Guard a 24-hour notice before performing flagging on Macalla Road on Yerba Buena Island at address: Coast Guard Island, Bldg. 54D, Alameda, CA 94501-5100, telephone: (510)437-5765.

The pedestrian stairway near Pier YB2 must remain accessible at all times.

No clearing of vegetation is allowed on Yerba Buena Island.

NAVIGATIONAL REQUIREMENTS.—Within 6 weeks prior to beginning work between piers, the contractor shall notify the Engineer in writing, along with a drawing, of his proposed method for anchoring barges. The Engineer will transmit the Contractor's proposal to the Coast Guard for approval. The Contractor shall not anchor any barges until his procedure has been approved by the Coast Guard. In the event that the required Coast Guard approval, in the opinion of the Engineer, delays the contractor's operations, the Contractor will be granted a time extension commensurate with the delay. Should the Contractor during the progress of the work, sink, lose, or throw overboard any material, plant, machinery or floatable debris which may be dangerous to or will obstruct navigation, he shall immediately recover or remove such obstruction. The Contractor shall give his immediate notice to the proper authorities and, if required, shall mark or buoy such obstructions until they can be removed. Should he neglect or delay compliance with the above requirements, such obstructions shall be removed by the State and the cost of such removal will be deducted from moneys due to the Contractor or may be recovered under his bond.

Compliance on the part of the contractor with the requirements of this Section shall not be construed as relieving the Contractor from his full responsibility for protecting and guarding the work from injury or from damage from any cause as specified under Section 7-1.016, "contractor's Responsibility for the Work and materials," of the Standard Specifications.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract prices paid for the various items of work involved and no separate payment will be made therefor.

5-1.27 RELATIONS WITH THE BAY CONSERVATION AND DEVELOPMENT COMMISSION

A Bay Conservation and Development Commission permit is applicable to this contract. The Contractor shall fully inform himself of the requirements of this permit as well as all rules, regulations, and conditions that may govern his operations and shall conduct his operations accordingly.

Copies of the permit may be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, Transportation Building, 1120 N Street, P.O. Box 942874, Sacramento, California 94274-0001, Telephone No. (916)654-4490, and are available for inspection at the office of the District Director of Transportation at 111 Grand Avenue, Oakland, CA.

Attention is directed to Sections 7-1.01, "Laws to be Observed," 7-1.01G and 7-1.12, "Responsibility for Damage," of the Standard Specifications.

Any sunken debris resulting from the construction effort shall be immediately marked with buoys and removed within 90 days. The Contractor shall survey the channel following completion of all construction and certify to the Coast Guard that the waterway has been cleared to the natural bottom.

No temporary work platforms or access roads shall be constructed in the Bay or in an area subject to tidal action of the Bay.

Any modifications to the permit which are proposed by the Contractor shall be submitted in writing to the Engineer for transmittal to the Bay Conservation and Development for their consideration.

When the Contractor is notified by the Engineer that a modification to the permit is under consideration, no work will be allowed which is inconsistent with the proposed modification until the Department takes action on the proposed modifications. Compensation for delay will be determined in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The provisions of this section shall be made a part of every subcontract executed pursuant to this contract.

Any modifications to any agreement between the Department of Transportation and the Bay Conservation and Development Commission will be fully binding on the Contractor, and the provisions of this section shall be made a part of every subcontract executed pursuant to this contract.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract prices paid for the various items of work involved and no separate payment will be made therefor.

5-1.28 AREAS FOR CONTRACTOR'S USE

Areas available for the exclusive use of the Contractor are specified in the "Materials Information" available to Contractors. Use of the Contractor's work areas and other State-owned property shall be at the Contractor's own risk, and the State shall not be held liable for any damage to or loss of materials or equipment located within such areas.

The Contractor shall remove all equipment, materials, and rubbish from the work areas and other State-owned property which he occupies and shall leave the areas in a presentable condition, in conformance with the provisions in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

The Contractor shall secure at his own expense any area required for storage of plant, equipment and materials, or for other purposes if sufficient area is not available to him within the contract limits.

5-1.29 UTILITIES

The Contractor shall make his own arrangements to obtain electrical power, water, compressed air and other utilities required for his operations and shall make and maintain the necessary service connections at his own expense. The

Contractor shall not be allowed the use of any existing utilities on the bridge or within the contract limits unless otherwise approved in writing by the Engineer.

5-1.30 USE OF EXISTING TRAVELER RAILS AND SCAFFOLDS

The existing traveler scaffolds and other scaffolds will not be available for use by the Contractor.

Attention is directed to Section 7-1.11, "Preservation of Property," and to Section 7-1.14, "Cooperation," of the Standard Specifications.

5-1.31 SANITARY PROVISIONS

State sanitary facilities will not be available for use by the Contractor's employees.

5-1.32 BRIDGE TOLLS

Toll-free passage on the San Francisco-Oakland Bay Bridge will be granted only for cars, trucks and special construction equipment which are clearly marked on the exterior with the Contractor's identification and which are being operated by the Contractor exclusively for the project and for the purpose of transporting materials and workmen directly to and from the jobsite.

The Contractor shall make application to the Engineer in advance for toll-free passage. The Contractor will be held accountable for the proper use of all passes issued, and upon completion of the work, shall return all unused passes.

Attention is directed to Section 23302, "Evasion of Toll," of the Vehicle Code.

5-1.33 ACCESS TO JOBSITE

Prospective bidders may make arrangements to visit the jobsite by contacting the Toll Services Manager, San Francisco-Oakland Bay Bridge, at telephone (510) 286-0794.

5-1.34 DRAWINGS

Attention is directed to Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions.

When working drawings are required by these special provisions, the drawings shall be submitted in accordance with the provisions in Section 55-1.02, "Drawings," of the Standard Specifications and the following:

1. Working drawings shall be submitted to the Engineer.
2. Working drawings shall not exceed 22" x 34" in size.
3. Microfilms are required of all approved shop drawings and shall be only a 24x reduction.

5-1.35 PERMITS AND LICENSES

Attention is directed to Section 7-1.04, "Permits and Licenses," of the Standard Specifications and these special provisions.

The Department has obtained the following permits for this project:

San Francisco Bay Conservation and Development Commission (BCDC)-region wide permit no. 9
National Pollutant Discharge Elimination System (NPDES)-permit no. CAS029998

Copies of these permits can be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, Transportation Building, 1120 N Street, P.O. Box 942874, Sacramento, California 94274-0001, Telephone No. (916) 654-4490, or may be seen at the office of the District Director of Transportation at Senior Duty Office for Construction, 111 Grand Avenue, Oakland Ca.

Full compensation for conforming to the requirements in these permits shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed therefor.

5-1.36 CONTAMINATED AND HAZARDOUS MATERIAL, GENERAL

Attention is directed to "Earthwork" of these special provisions regarding the removal and disposal of contaminated and hazardous material.

Contaminated and hazardous material have been discovered through testing within the project limits. A site investigation report, titled "Hazardous Waste Site Investigation of Soils at the East Yerba Buena Viaduct Approach," is available for inspection at the Department of Transportation, Toll Bridge Duty Senior's Office, 111 Grand Avenue, Oakland, California, (510) 286-5549. Requests to review the report must be made with the duty senior at least 24 hours in advance. The levels of material designated as hazardous are not regulated under the Resource Conservation and

Recovery Act (RCRA). The levels of hydrocarbon contamination are considered to be designated waste as defined by State of California regulations.

Hazardous materials shall be transferred directly from the excavation to a registered transport vehicle, a storage container approved for transport of hazardous waste by the United States Department of Transportation, or a stockpile location approved by the Engineer. Contaminated materials shall be transferred directly from the excavation to a transport vehicle, a storage container, or a stockpile location approved by the Engineer. Stockpile locations shall be maintained in accordance with the following requirements:

The material shall not contain free liquids that separate readily from the material. The presence or absence of free liquids shall be demonstrated by United States Environmental Protection Agency Method 9095 as modified by Section 66264.314 of Title 22 of the California Code of Regulations (CCR). Fluids removed from the stockpile area shall be contained and analyzed for proper identification of constituents prior to both treatment and disposal. Removal, disposal, treatment, and analysis of the fluids shall be performed at the Contractor's expense.

The material shall be stored on undamaged 60-mil high density polyethylene or an equivalent impermeable barrier unless the stockpiling location is on a paved surface. If the location is on a paved surface the thickness of the barrier can be reduced to 20-mil high density polyethylene or its equivalent. The dimensions of the barrier shall exceed the dimensions of the stockpile at all times. Any seams in the barrier shall be sealed to prevent leakage.

At the end of each day the material shall be covered with undamaged 12-mil polyethylene or an equivalent impermeable barrier to prevent windblown dispersion and precipitation run-off and run-on. When more than one sheet is required to cover the material, the sheets shall be overlapped a minimum of 1.5 feet in a manner that prevents water from flowing onto the material. The cover shall be secured in a manner that keeps it in place at all times. Driven anchors shall not be used except at the perimeter of the stockpile. Stockpile protection measures shall be inspected at the end of each work day and their integrity maintained in accordance with the requirements of these special provisions.

Stockpile requirements apply to all temporary storage of hazardous material outside of an excavation or a transport container including, but not limited to, staging of excavated material next to the excavation prior to pick up by loading equipment, accumulating material for full transport loads, and awaiting test results required by a disposal facility. The removal of stockpiles shall begin within 30 days of accumulating 100 kg (220 lbs.) of hazardous material. After final removal has occurred the Contractor shall be responsible for any cleanup deemed necessary by the Engineer.

All contaminated material and hazardous material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle, a designated stockpile of similar material, or the excavation of origin prior to the vehicle leaving the exclusion zone. No contaminated material or hazardous material shall be deposited on public roads. The Contractor shall indemnify the State from any costs due to spillage during the transport of the contaminated or hazardous material to the disposal facility.

The Contractor shall monitor the air quality continuously during excavation operations at all locations containing hazardous material.

Disposal of additional material resulting from the Contractor's option to slope the excavations in lieu of shoring at locations where this is possible or any excavation operations outside structure excavation pay limits will be at the Contractor's expense. This resultant material shall be treated as either contaminated material or hazardous material as indicated within the tables presented within "Contaminated and Hazardous Material Excavation" of these special provisions.

APPLICABLE RULES AND REGULATIONS.--Excavation, transport and disposal of contaminated material and hazardous material shall be in accordance with the rules and regulations of the following agencies:

United States Department of Transportation (USDOT)

United States Environmental Protection Agency (USEPA)

California Environmental Protection Agency (CAL-EPA)

1. Department of Toxic Substance Control (DTSC)

2. Integrated Waste Management Board

3. Regional Water Quality Control Board, Region 2 (RWQCB)

4. State Air Resources Board

Bay Area Air Quality Management District (BAAQMD)

California Division of Occupational Safety and Health Administration (CAL-OSHA)

PERMITS AND LICENSES.--The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material. The California Environmental Quality Act (CEQA) of 1970 (Chapter 1433, Stats. 1970), as amended may be applicable to permits, licenses and

authorizations which the Contractor shall obtain from all agencies in connection with performing the work of the contract. The Contractor shall comply with the provisions of said statutes in obtaining such permits, licenses and other authorizations.

The Engineer will obtain the Environmental Protection Agency Generator Identification No. and Board of Equalization Identification Number as the State is the Generator.

HEALTH, SAFETY AND WORK PLAN.--The Contractor shall prepare a detailed Health, Safety and Work Plan for all site personnel in accordance with the DTSC and CAL-OSHA regulations. The Health, Safety and Work Plan shall include a plot plan indicating the exclusion zones, contaminant reduction (decontamination zones) and support zones in accordance with California Code of Regulations (CCR), Title 8, an air monitoring plan, site clean up procedures, and physical barrier; and shall be submitted at least 15 working days prior to beginning any excavation for review and acceptance by the Engineer. Prior to submittal, the Contractor shall have the Health, Safety and Work Plan approved by a Civil Engineer, registered in the State of California and by an Industrial Hygienist certified by the American Board of Industrial Hygiene.

SAFETY.--Prior to performing any work at the locations containing material classified as hazardous, all personnel, including State Personnel, shall complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified. The training shall be provided by the Contractor. The Contractor shall provide a certification of completion of the Safety Training Program to all personnel. Any personal protective equipment required by the Contractor's Health, Safety and Work Plan for personnel working within the exclusion zone will be supplied to State personnel by the Contractor. The number of State personnel requiring the above mentioned safety training program and personal protective equipment will be 5.

The decontamination area shall be located outside of the exclusion zone. Water from decontamination procedures shall be collected and disposed of at an appropriate disposal site by the Contractor. Non-reusable protective equipment, once used by any personnel, including State personnel, shall be collected and disposed of at an appropriate disposal site by the Contractor. Temporary 6-foot chain link security fence shall be installed to surround and secure the exclusion zone.

SAMPLING AND ANALYSIS.--The Contractor shall test the material to be excavated at his own expense for any additional acceptance requirements put forth by the disposal facility. Sampling and analysis shall be performed using the sampling and analysis procedure required by the disposal facility.

The Contractor may perform additional tests on the material to be excavated at his option and expense for confirmation of the material classification as contaminated or hazardous. Sampling and analysis shall be the same or equivalent tests as those described in the site investigation reports. The Contractor shall submit for approval by the Engineer, his sampling and analysis procedure and the name and address of the laboratory to be used fifteen working days prior to beginning any sampling or analysis. The laboratory used shall be certified by the California Department of Health Services.

MEASUREMENT AND PAYMENT. -- Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work affected by this section and no additional compensation will be allowed therefor.

SECTION 6. (BLANK)

SECTION 7. (BLANK)

SECTION 8. MATERIALS)

SECTION 8-1. MISCELLANEOUS

8-1.01 PREQUALIFIED AND TESTED SIGNING AND DELINEATION MATERIALS

The Department maintains a trade name list of approved prequalified and tested signing and delineation materials and products. Approval of prequalified and tested products and materials shall not preclude the Engineer from sampling and testing of the signing and delineation materials or products at any time.

None of the listed signing and delineation materials and products shall be used in the work unless material or product is listed on the Department's List of Approved Traffic Products. A Certificate of Compliance shall be furnished as specified in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for signing and delineation materials and products. The certificate shall also certify that the signing and delineation material or product conforms to

the prequalified testing and approval of the Department of Transportation, Division of Traffic Operations and was manufactured in accordance with the approved quality control program.

Materials and products will be considered for addition to the approved prequalified and tested list if the manufacturer of the material or product submits to the Division of Traffic Operations a sample of the material or product. The sample shall be sufficient to permit performance of required tests. Approval of materials or products will be dependent upon a determination as to compliance with the specifications and test the Department may elect to perform.

The following is a listing of approved prequalified and tested signing and delineation materials and products:

Pavement Markers, Permanent Type

REFLECTIVE

1. Adelite (4"x4")
2. Apex, Model 921 (4"x4")
3. Pavement Markers, Inc., "Hye-Lite" (4"x4")
4. Ray-O-Lite, Models SS, RS and AA (4"x4")
5. Ray-O-Lite, Model 2002 (2.4"x4.7")
6. Stimsonite, Model 88 (4" x4")

REFLECTIVE WITH ABRASION RESISTANT SURFACE

1. Ray-O-Lite "AA" ARS (4"x4")(Not for use in recessed applications)
2. Ray-O-Lite Model 2002 ARS (2.2"x4.7")
3. Stimsonite, Model 911 (4"x4")(Not for use in recessed applications)
4. Stimsonite, Model 944 SB (2"x4")
5. Stimsonite, Model 948 (2.3"x4.7")
6. Stimsonite, Model 953 (2.75"x4.5")(Not for use in recessed applications)

NON-REFLECTIVE FOR USE WITH EPOXY OR BITUMEN ADHESIVE

1. Apex Universal (Ceramic)
2. Highway Ceramics, Inc. (Ceramic)
3. Zumar, TM40W/Y (Polyester)

NON-REFLECTIVE FOR USE WITH BITUMEN ADHESIVE ONLY

1. Apex Universal, Model 929 (ABS)
2. Elgin Molded Plastics, "Empco-Lite" Model 900 (ABS)
3. Hi-Way Safety, Inc., Models P20-2000W and 2001Y (ABS)
4. Interstate Sales, "Diamond Back" (ABS)
5. Loomis Plastics, D-Dot (ABS)
6. Pavement Markers, Inc., (Marker Supply) - Models A1107 and AY1108 (ABS)
7. Road Creations, Model RCB4NR (Acrylic)

Pavement Markers, Temporary Type

TEMPORARY MARKERS FOR LONG TERM DAY/NIGHT USE (6 months or less)

1. Apex Universal, Model 924 (4"x4")
2. Davidson Plastics, Model 3.0
3. Elgin Molded Plastics, "Empco-Lite" Model 901 (4" Round)
4. Highway Technologies, Megalites (4"x4")
5. Road Creations, Model R41C (4"x4")
6. Vega Molded Products "Temporary Road Marker" (3"x4")

TEMPORARY MARKERS FOR SHORT TERM DAY/NIGHT USE (14 days or less)

1. Apex Universal, Model 932
2. Davidson Plastics, Models TOM (Standard) with Reflexite PC-1000, or (WZ) with Reflexite AC-1000 Sheeting

3. Hi-Way Safety, Inc., Model 1280/1281 with Reflexite PC-1000

TEMPORARY MARKERS FOR SHORT TERM DAY/NIGHT USE (14 days or less at seal coat locations)

1. Apex Universal, Model 932
2. Davidson Plastics, Models TRPM (Standard) with Reflexite PC-1000, or (WZ) with Reflexite AC-1000 Sheeting
3. Davidson Plastics, Models "HH" (High Heat) TRPM (Standard) with Reflexite PC-1000, or (WZ) with Reflexite AC-1000 Sheeting
4. Hi-Way Safety, Inc., Model 1280/1281 with Reflexite PC-1000

Striping and Pavement Marking Materials

PERMANENT TRAFFIC STRIPING AND PAVEMENT MARKING TAPE (For use on high and low volume roadways)

1. Advanced Traffic Marking, Series 300 and 400
2. Brite-Line, Series 1000
3. Swarco Industries, "Director 35" (For transverse application only)
4. Swarco Industries, "Director 60"
5. 3M, "Stamark" Series 380, A420, A440 and 5730
6. 3M, "Stamark" Series N420 and N440 (For transverse application only)

PERMANENT TRAFFIC STRIPING AND PAVEMENT MARKING TAPE (For use on low volume roadways only)

1. 3M, "Stamark" Series A320 Bisymmetric

TEMPORARY REMOVABLE STRIPING AND PAVEMENT MARKING TAPE

1. Advanced Traffic Marking, ATM Series 200
2. Brite-Line, Series 100
3. P.B. Laminations, Aztec, Grade 102
4. Swarco Industries, "Director-2"
5. 3M, "Stamark" Brand, Detour Grade, Series 5710 and A620

PREFORMED THERMOPLASTIC

1. Flint Trading, "Premark" and "Permark 20/20 Flex"
2. Pavemark, "Hotape"

REMOVABLE TRAFFIC PAINT

1. Belpro, Series 250/252 and No. 93 Remover

Class 1 Delineators

ONE-PIECE DRIVEABLE FLEXIBLE TYPE, 1700 mm (66")

1. Carsonite, Curve-Flex CFRM-400
2. Carsonite, Roadmarker CRM-375
3. Davidson Plastics, "Flexi-Guide Models 400 and 566"
4. GreenLine Model HWDI-66
5. GreenLine Model CGDI-66
6. J. Miller Industries, Model JMI-375 with soil anchor)

SPECIAL USE FLEXIBLE TYPE, 1200 mm (48")

1. Carsonite, "Survivor" with 18" U-Channel anchor
2. FlexStake, H-D

3. GreenLine HWD with 18" soil anchor
4. GreenLine CGD with 18" soil anchor
5. Safe-Hit with 8" pavement anchor (SH248-GP1)
6. Safe-Hit with 15" soil anchor (SH248-GP2)
7. Safe-Hit with 18" soil anchor (SH248-GP3)

SURFACE MOUNT FLEXIBLE TYPE, 1200 mm (48")

1. Bent Manufacturing Co., "Masterflex" Model MF-180EX-48"
2. Carsonite, "Super Duck II"
3. FlexStake, Surface Mount H-D

Channelizers

SURFACE MOUNT TYPE, 900 mm (36")

1. Bent Manufacturing Co., "Masterflex" Models MF-360-36 (Round) and MF-180-36" (Flat)
2. Carsonite, "Super Duck" (Flat SDF-436, Round SDR-336)
3. Carsonite, Super Duck II Model SDCF203601MB "The Channelizer"
4. Davidson Plastics, Flex-Guide FG300
5. FlexStake, Surface Mount H-D
6. GreenLine, Model SMD-36
7. Repo, Models 300 and 400
8. Safe-Hit, Guide Post, Model SH236SMA, with glue down base
9. The Line Connection, "Dura-Post" Model DP36-3 (Permanent)
10. The Line Connection, "Dura-Post" Model DP36-3C (Temporary)

Type K Object Markers, 450 mm (18")

1. Carsonite, Model SMD-615
2. Repo, Models 300 and 400
3. Safe-Hit, Model SH718SMA
4. The Line Connection, Model DP21-4K (Vertical configuration only)

Type K-4 Object Markers, 450-600 mm (18-24") (previously listed as "Q")

1. Carsonite, Super Duck II
2. Repo, Models 300 and 400
3. Safe-Hit, Models SH824SMA--WA and SH824GP3--WA
4. The Line Connection, Model "DP21-4Q"

Concrete Barrier Markers (For use to the left of traffic)

IMPACTABLE TYPE

1. Astro Optics "FB"
2. Davidson Plastics, Model PCBM-12
3. Duraflex Corp., "Flexx 2020" and "Electriflexx"

NON-IMPACTABLE TYPE

1. Astro-Optics, JD Series
2. Stimsonite, Model 967 (with 3 1/4" Acrylic cube corner reflector)
3. Stimsonite, Model 967LS (with Stimsonite Sheeting)
4. Vega Molded Products, Models GBM and JD

Thrie Beam Barrier Markers (For use to the left of traffic)

1. Duraflex Corp., "Railrider"
2. Davidson Plastics, "Mini" (3"x10")

Concrete Barrier Delineators, 400 mm (16") (For use to the right of traffic. When mounted on top of barrier, places top of reflective element at 48" [1200 mm])

1. Davidson Plastics, Model PCBM T-16
2. Safe-Hit, Model SH216RBM

Sound Wall Delineator (On vertical surface, places top of reflective element at 48" [1200 mm])

1. Davidson Plastics, PCBM S-36

Guard Railing Delineator, 685 mm (27") Wood Post Type (For use to the right or left of traffic. Places reflective element at 48" [1200 mm].)

1. Carsonite, Model 427
2. Davidson Plastics FG 427 and FG-527
3. GreenLine GRD 27-inch
4. Safe-Hit, Model SH227GRD

Guard Railing Delineator, 685 mm (27") Steel Post Type (For use to the right or left of traffic. Places reflective element at 48" [1200 mm].)

1. Carsonite, Model CFGR-327 with CFGRBK300 Mounting Bracket

Reflective Sheeting

CHANNELIZERS, BARRIER MARKERS AND DELINEATORS

1. 3M, High Intensity (Long Term)
2. Reflexite, PC-1000, Metalized Polycarbonate (Long Term)
3. Reflexite, AC-1000, Acrylic (Long Term)
4. Reflexite, AP-1000, Metalized Polyester (Short Term)
5. Reflexite, AR-1000, Abrasion Resistant Coating (Short Term)
6. Stimsonite, Series 4500 (For rigid substrate devices only)

TRAFFIC CONES, 330 mm (13") Sleeves

1. Reflexite SB (Polyester), Vinyl or "TR" (Semi-transparent)

TRAFFIC CONES, 100 and 150 mm (4" and 6") Sleeves

1. 3M Series 3840
2. Reflexite Vinyl or "TR" (Semi-transparent)

BARRELS AND DRUMS

1. Reflexite, "Super High Intensity"
2. 3M Series 3810

BARRICADES, Type I, Engineer Grade

1. American Decal, Adcolite
2. Avery Dennison, 1500/1600
3. 3M, Scotchlite, Series CW

SIGNS (Sheeting Types conforming to the requirements of ASTM Designation: D 4956-93B)

1. Type II, Super Engineer Grade (State-Furnished Signs Only)
 - A. Avery Dennison, "Fasign" 2500 Series

- B. Kiwalite, Type II
 - C. Nikkalite 1800 Series
- 2. Type III, High Performance
 - A. 3M, High Intensity, Series 3780
- 3. Type IV, High Performance
 - A. Stimsonite, Series 4200
- 4. Type VI, Roll-Up Signs
 - A. Reflexite, Vinyl

Sign Substrate for Construction Area Signs

- 1. Aluminum
- 2. Fiberglass Reinforced Plastic (FRP)
- 3. Sequentia, "Polyplate"
- 4. Fiber-Brite

SECTION 8-2. CONCRETE

8-2.01 TRANSPORTING MIXED CONCRETE

The ninth and tenth paragraphs in Section 90-6.03, "Transporting Mixed Concrete," of the Standard Specifications are amended to read:

Each load of ready-mixed concrete delivered at the jobsite shall be accompanied by a ticket showing the mix identification number, non-repeating load number, date and time at which the materials were batched, the total amount of water (gallons) added to the load and for transit-mixed concrete, the reading of the revolution counter at the time the truck mixer is charged with cement. This ticket shall also show the actual scale weights (pounds) for the ingredients batched or the calculated portland cement concrete volume (cubic yards). Theoretical or target batch weights shall not be used as a substitute for actual scale weights. When showing a calculated portland cement concrete volume on the delivery ticket, the Contractor shall maintain and have available a record of the following information for each batched load:

- 1. Mix identification number; specific to the contract.
- 2. Load number; shall match the load number on the delivery ticket.
- 3. Date and time the load was batched.
- 4. Actual batch weight (pounds) for each ingredient.
- 5. Any water (gallons) added at the plant, in addition to the water proportioned for the batch.

When requested, the Contractor shall submit the recorded information for calculated portland cement concrete volumes to the Engineer. The information shall be provided in printed form, or if acceptable to the Engineer, data may be submitted on a 3.5-inch diskette. If a diskette is submitted, the data shall be in a tab-delimited text format or data interchange format (DIF), readable in both the MS-DOS and MACINTOSH systems.

8-2.02 ADMIXTURES

Section 90-4.02, "Materials," of the Standard Specifications is amended by adding the following material to those listed:

Silica Fume—ASTM Designation: C 1240, with reduction of mortar expansion of 80 percent, minimum, using the portland cement from the proposed mix design.

The first subparagraph of the first paragraph in Section 90-4.05, "Optional Use of Chemical Admixtures," of the Standard Specifications is deleted and the second subparagraph of the first paragraph in Section 90-4.05 is amended to read:

When a water-reducing admixture or a water-reducing and retarding admixture is used, the cement content specified or ordered may be reduced by a maximum of 5 percent by weight except that the resultant cement content shall be not less than 470 pounds per cubic yard.

Section 90-4.08, "Required Use of Mineral Admixtures," of the Standard Specifications is amended by adding the following before the first paragraph:

Mineral admixture will be required in the manufacture of concrete containing aggregate that is determined to be "deleterious" or "potentially deleterious" as specified in Section 90-2.02, "Aggregates". The calcium oxide content of mineral admixtures shall not exceed 10 percent. Where Section 90-1.01, "Description," specifies a maximum cement content in pounds per cubic yard, the total weight of portland cement and mineral admixture per cubic yard shall not exceed the specified maximum cement content. The concrete shall conform to one of the following:

1. The concrete containing "Type IP (MS) Modified" cement shall conform to the provisions in Section 90-2.01, "Portland Cement," except that the mineral admixture used in the manufacture of "Type IP (MS) Modified" cement shall have a calcium oxide content not exceeding 2 percent, and an alkali content not exceeding 4 percent. The amount of cement shall be sufficient to satisfy the specified minimum cement content.

2. When the calcium oxide content in a mineral admixture does not exceed 2 percent, the portland cement in the concrete shall conform to the provisions in Section 90-2.01, "Portland Cement," with an amount not less than 85 percent of the amount required to satisfy the specified minimum cement content. The concrete shall also contain the mineral admixture in an amount not less than 15 percent, by weight, of the amount of cement required to satisfy the specified minimum cement content. The mineral admixture shall conform to the requirements in ASTM Designation: C 618, Class N or F, except that the alkali content shall not exceed 4 percent.

3. When the calcium oxide content in a mineral admixture is between 2 percent and 10 percent, the portland cement in the concrete shall conform to the provisions in Section 90-2.01, "Portland Cement," with an amount not less than 85 percent of the amount required to satisfy the specified minimum cement content. The concrete shall also contain the mineral admixture in an amount not less than 30 percent, by weight, of the amount of cement required to satisfy the specified minimum cement content. The mineral admixture shall conform to the requirements in ASTM Designation: C 618, Class N or F, except that the alkali content shall not exceed 4 percent.

4. The portland cement in the concrete shall conform to the provisions in Section 90-2.01, "Portland Cement," with an amount required to satisfy the specified minimum cement content. The concrete shall also contain a mineral admixture in an amount not less than 10 percent, by weight, of the amount of cement required to satisfy the specified minimum cement content. The mineral admixture shall conform to these provisions for silica fume.

SECTION 8-2. (BLANK)

SECTION 8-3. WELDING

8-3.01 WELDING ELECTRODES

Flux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform any type of welding for this project.

8-3.02 WELDING QUALITY CONTROL

Welding quality control shall apply to the items of work described herein and shall conform to the requirements in the AWS welding codes, the Standard Specifications and these special provisions.

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans or in these special provisions, the year of adoption for these codes shall be as listed:

| AWS Code | Year of Adoption |
|-----------------------|------------------|
| D1.1 | 1996 |
| D1.4 | 1992 |
| D1.5 | 1995 |
| D1.5 (metric only) | 1996 |

All requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

Except for steel piling, welding performed anywhere other than at a permanent fabrication facility that is certified under the AISC Quality Certification Program, Category III, Major Steel Bridges, shall conform to the provisions for welding quality control as specified herein. Welding of steel piling shall conform to the provisions in "Piling" elsewhere in these special provisions and to the provisions for welding quality control specified herein.

The welding of all fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and herein.

Unless otherwise specified, when any type of welding is performed on items of work including 1) steel piles, 2) bar reinforcement, 3) steel structures and 4) column casings, the Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of all welding, including materials and workmanship, performed by the Contractor and all subcontractors.

The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.

No welding inspection personnel or nondestructive testing (NDT) firms to be used in the work shall be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project.

The QCM shall be the sole individual responsible to the Contractor for submitting and receiving all correspondence and required submittals and reports regarding welding to and from the Engineer.

Prior to submitting the Quality Control Plan (QCP) required herein, a pre-welding meeting shall be held between the Engineer, Contractor and any welding subcontractors to be used in the work to discuss the requirements for the QCP.

Prior to performing any welding, the Contractor shall submit to the Engineer, in accordance with the provisions of Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 3 copies of a separate QCP for each item of work for which welding is to be performed. As a minimum, each QCP shall include the following:

1. The name of the welding firm and the NDT firm to be used;
2. A manual prepared by the NDT firm that shall include equipment, testing procedures, code of safe practices, the Written Practice of the NDT firm, and the names, qualifications and documentation of certifications for all personnel to be used;
3. The name of the QCM and the names, qualifications and documentation of certifications for all Quality Control (QC) Inspectors and Assistant Quality Control Inspectors to be used;
4. An organizational chart showing all QC personnel and their assigned QC responsibilities;
5. The methods and frequencies for performing all required quality control procedures, including QC inspection forms to be used, as required by the specifications including:
 - (a) all visual inspections;
 - (b) all NDT including radiographic geometry, penetrameter and shim selection, film quality, film processing, radiograph identification and marking system, and film interpretation and reports; and
 - (c) calibration procedures and calibration frequency for all NDT equipment;
6. A system for the identification and tracking of all welds, NDT and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;
7. Standard procedures for performing noncritical repair welds. Noncritical repair welds are defined as welds to deposit additional weld beads or layers to compensate for insufficient weld size and to fill limited excavations that were performed to remove unacceptable edge or surface discontinuities, rollover or undercut. The depth of these excavations shall not exceed 65 percent of the specified weld size;
8. The welding procedure specification (WPS), including documentation of all supporting Procedure Qualification Record (PQR) tests performed, and the name of the testing laboratory who performed the tests, to verify the acceptability of the WPS. The submitted WPS shall be within the allowable period of effectiveness;
9. Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, tests performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness; and
10. One copy each of all AWS welding codes and the FCP which are applicable to the welding to be performed. These codes and the FCP shall become the permanent property of the Department.

The Engineer shall have 10 working days to review the QCP submittal after a complete plan has been received. No welding shall be performed until the QCP is approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the QCP, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

An amended QCP or addendum shall be submitted to, and approved in writing by the Engineer, for any proposed revisions to the approved QCP. An amended QCP or addendum will be required for any revisions to the QCP, including but not limited to a revised WPS, additional welders, changes in NDT firms or procedures, QC or NDT personnel, or updated systems for tracking and identifying welds. The Engineer shall have 3 working days to complete the review of the amended QCP or addendum. Work that is affected by any of the proposed revisions shall not be performed until the amended QCP or addendum has been approved. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the amended QCP or addendum, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

After final approval of the QCP, amended QCP or addendum, the Contractor shall submit to the Engineer 7 copies each of these approved documents.

A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding, and shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each Quality Control Inspector shall also be included in the log.

It is expressly understood that the Engineer's approval of the Contractor's QCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any of the requirements of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials and equipment may be rejected notwithstanding approval of the QCP.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 7 days following the performance of any welding:

1. Reports of all visual weld inspections and NDT;
2. Radiographs and radiographic reports, and other required NDT reports;
3. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests, corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable; and
4. Daily production log.

All reports regarding NDT, including radiographs, shall be signed by both NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.

The Engineer shall review the Welding Report to determine if the Contractor is in conformance with the QCP. Except for steel piling, the Engineer shall be allowed 7 days to review the report and respond in writing after a complete Welding Report has been received. The review time for steel piling shall be as specified in "Piling" elsewhere in these special provisions. Prior to receiving notification from the Engineer of the Contractor's conformance with the QCP, the Contractor may encase in concrete or cover any welds for which a Welding Report has been submitted. However, should the Contractor elect to encase or cover those welds prior to receiving notification from the Engineer, it is expressly understood that the Contractor shall not be relieved of the responsibility for incorporating material in the work that conforms to the requirements of the plans and specifications. Any material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover any welds pending notification by the Engineer, and should the Engineer fail to complete the review and provide notification within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in notification, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Sections 6.1.1 through 6.1.3.3 of AWS D 1.1, Sections 7.1.1 and 7.1.2 of AWS D 1.4, and Sections 6.1.1.1 through 6.1.3.3 of AWS D 1.5 are replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing prior to welding, during welding and after welding as specified in this section and additionally as necessary to ensure that materials and workmanship conform to the requirements of the contract documents.

The Quality Control (QC) Inspector shall be the duly designated person who performs inspection, testing, and quality matters for all welding.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

All QC Inspectors shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as AWS Certified Welding Inspectors (CWI) in accordance with the provisions of AWS QC1, "Standard and Guide for Qualification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in accordance with the provisions of AWS QC1, "Standard and Guide for Qualification of Welding Inspectors," or has equivalent qualifications. The QC Inspector shall monitor the Assistant QC Inspector's work, and shall be responsible for signing all reports.

When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

Section 6.14.7, "Personnel Qualification," of AWS D 1.1, Section 7.7.6, "Personnel Qualification," of AWS D 1.4 and Section 6.1.3.4, "Personnel Qualification," of AWS D 1.5 are amended to read:

Personnel performing NDT shall be qualified in accordance with the current edition of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. Only individuals who are 1) qualified for NDT Level II, or 2) Level III technicians who have been directly certified by the ASNT and are authorized to perform the work of Level II technicians, shall perform NDT, review the results, and prepare the written reports.

Section 6.5.4, "Scope of Examination," of AWS D 1.1 and Section 7.5.4 of AWS D 1.4 are amended to read:

The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met.

Section 6.5.4 of AWS D 1.5 is amended to read:

The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met. The QC Inspector shall examine the work to make certain that it meets the requirements of section 3 and 9.21. The size and contour of welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities should be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.

The Engineer shall have the authority to verify the qualifications or certifications of any welder, Quality Control Inspector, or NDT personnel to specified levels by retests or other means.

A sufficient number of QC Inspectors shall be provided to ensure continuous inspection when any welding is being performed. Continuous inspection, as a minimum, shall include (1) having QC Inspectors continually present on all shifts when any welding is being performed, or (2) having a QC Inspector within such close proximity of all welding operations that inspections by the QC Inspector of each operation, at each welding location, shall not lapse for a period exceeding 30 minutes.

Inspection and approval of the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day that welding is performed.

The QC Inspector shall provide reports to the QCM on a daily basis for each day that welding is performed.

Except for noncritical weld repairs, base metal repairs, or any other type of repairs not submitted in the QCP, the Engineer shall be notified immediately in writing when any welding problems or deficiencies are discovered and also of the proposed repair procedures to correct them. The Engineer shall have 5 working days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the proposed repair procedures, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

When joint details that are not prequalified by the applicable AWS codes are proposed for use in the work, all welders using these details shall perform a qualification test plate using the approved WPS variables and the joint detail to be used in production. The test plate shall be the maximum thickness to be used in production. The test plate shall be mechanically or radiographically tested as directed by the Engineer. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. A valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

All qualification tests for welders, welding operators, and WPSs used in welding operations will be witnessed by the Engineer or an independent third party acceptable to the Engineer.

Section 6.6.5, "Nonspecified Nondestructive Testing Other Than Visual," of AWS D 1.1, Section 6.6.5 of AWS D 1.4 and Section 6.6.5 of AWS D 1.5 shall not apply.

For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS welding codes, in the Standard Specifications or in these special provisions. Additional NDT required by the Engineer, will be paid for as extra work in accordance with Section 4-1.03D, "Extra Work," of the Standard Specifications. Should any welding deficiencies be discovered by this additional NDT, the cost of the testing will not be paid for as extra work, and shall be at the Contractor's expense.

All required repair work to correct welding deficiencies, whether discovered by the required visual inspection or NDT, or by additional NDT directed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.

At the completion of all welding, the QCM shall sign and furnish to the Engineer, a certificate of compliance in accordance with Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in accordance with the details shown on the plans and the provisions of the Standard Specifications and these special provisions.

Full compensation for conforming to all of the requirements of this section, Welding Quality Control, shall be considered as included in the contract prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

SECTION 9. DESCRIPTION OF BRIDGE WORK

The bridge work to be done consists, in general, of constructing earthquake retrofit on the following structures as shown on the plans:

SAN FRANCISCO-OAKLAND BAY BRIDGE
(Bridge Nos. 34-0004 and 33-0025)

SECTION 10. CONSTRUCTION DETAILS

SECTION 10-1. GENERAL

10-1.01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

The first order of work shall be as follows:

Begin work at Pier E9 and proceed diligently to completion.

At the same time, begin pier substructure work (gusset plate work) at Piers E2 through E8. Work shall proceed diligently in as many piers as the Contractor's forces and equipment allow and as permitted by the bird nesting requirements in this section.

The Contractor or his equipment shall not come within a ten-foot radius of Building 262, known as the "Torpedo Building", on the easternmost side of Yerba Buena Island.

The Contractor's attention is directed to the existence of the Sprint and Nextel Communications equipment cabinets and antennas in the vicinity of Bent 49 (left) of the East Bay Yerba Buena Island Viaduct. Should the Sprint and Nextel Communications accessories require relocation in order to perform the work of this contract, a minimum of 30 days notice must be given, through the Engineer.

At locations exposed to public traffic where barriers are to be constructed, the Contractor shall schedule his operations so that at the end of each working day there shall be no post holes open nor shall there be any barrier posts installed without the blocks and rail elements assembled and mounted thereon.

The Contractor's attention is directed to the existence of the endangered American peregrine falcons' preferred nesting site on Pier E-2 of the San Francisco-Oakland Bay Bridge. As a result, work on and within a 300-foot radius of Pier E-2 shall be scheduled to begin prior to the onset of the nesting period in early February or after the chicks have left or have been removed by others in early June. If work has begun on Pier E-2 prior to February 14, then Pier E-3 shall be excluded from work during this time to ensure the American peregrine falcons have an alternate site for their nesting.

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Once the birds have established a nest on Pier E-2, or on any of the other piers, no work shall take place within a 300-foot radius in all directions from the nest site. This applies to the nesting period of February 14 through June 7 or on dates determined by the Engineer.

A colony of double-crested cormorants nest under the lower deck of the east bay spans from Piers E-5 through E-15.

In accordance with Migratory Bird Treaty Act, double-crested cormorants shall be protected and prevented from nest building during the period from March 1 through September 30. Method to prevent cormorant nest building include washing them off the bridge with high-pressure water. When a completed and occupied nest is discovered, the nest shall not be disturbed.

The Contractor's marine vessels shall maintain a distance not less than 300 feet from the rocky beach area west of the Coast Guard lighthouse, southwest shore of Yerba Buena Island, to avoid disturbance of the harbor seal as protected by the Federal Marine Mammal Protection Act.

10-1.02 WATER POLLUTION CONTROL

Water pollution control work shall conform to the requirements in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these special provisions.

This project shall conform to the requirements of Permit No. CAS029998 issued by the San Francisco Bay Regional (Region 2) Water Quality Control Board. This permit, hereafter referred to as the "Permit," regulates storm water discharges associated with construction activities.

Water pollution control work shall conform to the requirements in the Construction Contractor's Guide and Specifications of the Caltrans Storm Water Quality Handbooks, dated April 1997, and addenda thereto issued up to and including the date of advertisement of the project, hereafter referred to as the "Handbook". Copies of the Handbook may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815, Telephone: (916) 445-3520. In addition, a Conceptual Storm Water Pollution Prevention Plan, hereafter referred to as the CSWPPP, has been prepared for this project by the Department. The CSWPPP shall be used as a reference for determining and preparing the minimum work required under the Permit and this special provision.

Copies of the Handbook, CSWPPP, and the Permit are also available for review at 111 Grand Avenue, Oakland, California 94601. Please call the Toll Bridge Seismic Program Duty Senior, telephone number (510) 286-5549, to reserve a copy of the documents at least 24 hours in advance.

The Contractor shall become fully informed of and comply with the applicable provisions of the Handbook, Permit and Federal, State and local regulations that govern the Contractor's operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction. The Contractor shall maintain a copy of the Permit at the project site and shall make the Permit available during construction activities.

Unless arrangements for disturbance of areas outside the project limits are made by the Department and made part of the contract, it is expressly agreed that the Department assumes no responsibility to the Contractor or property owner whatsoever with respect to any arrangements made between the Contractor and property owner to allow disturbance of areas outside the project limits.

The Contractor shall be responsible for the costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section "Water Pollution Control", including but not limited to, compliance with the applicable provisions of the Handbook, Permit and Federal, State and local regulations. For the purposes of this paragraph, costs and liabilities include, but are not limited to, fines, penalties and damages whether assessed against the State or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

In addition to any remedy authorized by law, so much of the money due the Contractor under the contract that shall be considered necessary by the Department may be retained by the State of California until disposition has been made of the costs and liabilities.

The retention of money due the Contractor shall be subject to the following:

1. The Department will give the Contractor 30 days notice of its intention to retain funds from any partial payment which may become due to the Contractor prior to acceptance of the contract. Retention of funds from any payment made after acceptance of the contract may be made without prior notice to the Contractor.
2. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications.
3. If the Department has retained funds and it is subsequently determined that the State is not subject to the costs and liabilities in connection with the matter for which the retention was made, the Department shall be liable for interest on the amount retained at the legal rate of interest for the period of the retention.

Conformance with the requirements of this section "Water Pollution Control" shall not relieve the Contractor from the Contractor's responsibilities, as provided in Section 7-1.11, "Preservation of Property," and Section 7-1.12, "Responsibility for Damage," of the Standard Specifications.

The Contractor shall, at reasonable times, allow authorized agents of the California Regional Water Quality Control Board, State Water Resources Control Board, U. S. Environmental Protection Agency and local storm water management agency, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the construction site and the Contractor's facilities pertinent to the work;
2. Have access to and copy any records that must be kept as specified in the Permit;
3. Inspect the construction site and related soil stabilization practices and sediment control measures; and
4. Sample or monitor for the purpose of ensuring compliance with the Permit.

The Contractor shall notify the Engineer immediately upon request from regulatory agencies to enter, inspect, sample, monitor or otherwise access the project site or the Contractor's records.

STORM WATER POLLUTION PREVENTION PLAN PREPARATION, APPROVAL AND UPDATES.—

As part of the water pollution control work, a Storm Water Pollution Prevention Plan, hereafter referred to as the "SWPPP," is required for this contract. The SWPPP shall conform to the requirements in Section 7-1.01G, "Water Pollution," of the Standard Specifications, the requirements in the Handbook, the requirements of the Permit and these special provisions. Upon the Engineer's approval of the SWPPP, the SWPPP shall be deemed to fulfill the requirements of Section 7-1.01G, "Water Pollution," of the Standard Specifications for development and submittal of a Water Pollution Control Program.

No work having potential to cause water pollution, as determined by the Engineer, shall be performed until the SWPPP has been approved by the Engineer.

Within 20 days after the approval of the contract, the Contractor shall submit 3 copies of the SWPPP to the Engineer. The Contractor shall allow 15 days for the Engineer to review the SWPPP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within 10 days of receipt of the Engineer's comments and shall allow 10 days for the Engineer to review the revisions. Upon the Engineer's approval of the SWPPP, 3 additional copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer.

The objectives of the SWPPP shall be to identify pollution sources that may adversely affect the quality of storm water discharges associated with the project and to identify, construct, implement and maintain water pollution control measures, hereafter referred to as control measures, to reduce to the extent feasible pollutants in storm water discharges from the construction site both during and after construction is completed under this contract.

The SWPPP shall incorporate control measures in the following categories:

1. Soil stabilization practices;
2. Sediment control practices;
3. Sediment tracking control practices;
4. Wind erosion control practices; and
5. Non-storm water management; and waste management and disposal control practices.

Specific objectives and minimum requirements for each category of control measures are contained in the Handbook.

The Contractor shall consider the objectives and minimum requirements presented in the Handbook for each of the above categories. The special minimum requirements listed below supersede the minimum requirements listed in the

Handbook for the same category. When minimum requirements are listed for any category, the Contractor shall incorporate into the SWPPP, and implement on the project, one or more of the listed minimum controls required in order to meet the pollution control objectives for the category. In addition, the Contractor shall consider other control measures presented in the Handbook and shall incorporate into the SWPPP and implement on the project the control measures necessary to meet the objectives of the SWPPP. The Contractor shall document the selection process in accordance with the procedure specified in the Handbook. The following special minimum requirements are established:

| Category: | Minimum Requirements: |
|---|--|
| Non-Storm Water and Waste Management Controls | CD10(2) Material Delivery and Storage, CD11(2) Material Use, CD12(2) Spill Prevention and Control, CD13(2) Solid Waste Management, CD18(2) Vehicle and Equipment Cleaning, CD19(2) Vehicle and Equipment Fueling, CD20(2) Vehicle and Equipment Maintenance, CD22(2) Scheduling, CD44(2) Illicit Discharge/Illegal Dumping Reporting |
| Erosion & Sediment Source Controls | CD25(2) Mulching CD26B(2) Geotextiles, Mats/Plastic Covers & Erosion Control Blankets |
| Wind Erosion Controls | CD26B(2) Geotextiles, Mats/Plastic Covers & Erosion Control Blankets |
| Sediment Treatment Controls | CD40(2) Storm Drain Inlet Protection CD43(2) Fiber Rolls |

The SWPPP shall include, but not be limited to, the following items as described in the Handbook and Permit:

1. Source Identification;
2. Erosion and Sediment Controls;
3. Non-Storm Water Management;
4. Waste Management and Disposal;
5. Maintenance, Inspection and Repair;
6. Training;
7. List of Contractors and Subcontractors;
8. Post-Construction Storm Water Management;
9. Preparer;
10. Copy of the Local Permit;
11. BMP Consideration Checklist;
12. SWPPP Checklist;
13. Schedule of Values; and
14. Water Pollution Control Drawings.

The Contractor shall amend the SWPPP, graphically and in narrative form, whenever there is a change in construction activities or operations which may affect the discharge of significant quantities of pollutants to surface waters, ground waters, municipal storm drain systems, or when deemed necessary by the Engineer. The SWPPP shall also be amended if it is in violation of any condition of the Permit, or has not effectively achieved the objective of reducing pollutants in storm water discharges. Amendments shall show additional control measures or revised operations, including those in areas not shown in the initially approved SWPPP, which are required on the project to control water pollution effectively. Amendments to the SWPPP shall be submitted for review and approval by the Engineer in the same manner specified for the initially approved SWPPP. Approved amendments shall be dated and logged in the SWPPP. Upon approval of the amendment, the Contractor shall implement the additional control measures or revised operations.

The Contractor shall keep a copy of the SWPPP and approved amendments at the project site. The SWPPP shall be made available upon request of a representative of the Regional Water Quality Control Board, State Water Resources Control Board, U.S. Environmental Protection Agency or local storm water management agency. Requests by the public shall be directed to the Engineer.

By June 15 of each year, the Contractor shall submit an annual certification to the Engineer stating compliance with the requirements governing the Permit. If the project is in non-compliance at any time, the Contractor shall make a written report to the Engineer within 48 hours of identification of non-compliance.

SCHEDULE OF VALUES.—The Contractor shall submit with the SWPPP, for approval by the Engineer, a schedule of values detailing the cost breakdown of the contract lump sum item for water pollution control. The schedule of values shall reflect the items of work, quantities and costs for control measures shown in the SWPPP, except for critical temporary controls and permanent control measures which are shown on the project plans and for which there is a contract item of work. Adjustments in the items of work and quantities listed in the schedule of values shall be made when required to address approved amendments to the SWPPP.

The sum of the amounts for the units of work listed in the schedule of values shall be equal to the contract lump sum price for water pollution control.

If approved in writing by the Engineer, the schedule of values will be used to determine progress payments for water pollution control during the progress of the work, and as the basis for calculating any adjustment in compensation for the contract item for water pollution control due to changes in the work ordered by the Engineer.

SWPPP IMPLEMENTATION.—Upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting and maintaining the control measures included in the SWPPP and any amendments thereto and for removing and disposing of temporary control measures. Unless otherwise directed by the Engineer or specified in these special provisions, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. Requirements for installation, construction, inspection, maintenance, removal and disposal of control measures are specified in the Handbook and these special provisions.

Soil stabilization practices and sediment control measures, including minimum requirements, shall be provided throughout the winter season, defined as between September 15 and May 1.

Implementation of soil stabilization practices and sediment control measures for soil-disturbed areas of the project site shall be completed, except as provided for below, no later than 20 days prior to the beginning of the winter season or upon start of applicable construction activities for projects which begin either during or within 20 days of the winter season.

Throughout the winter season, the active, soil-disturbed area of the project site shall be no more than 2.5 acres. The Engineer may approve, on a case-by-case basis, expansions of the active, soil-disturbed area limit. The Contractor shall demonstrate the ability and preparedness to fully deploy soil stabilization practices and sediment control measures to protect soil-disturbed areas of the project site before the onset of precipitation. The Contractor shall maintain a quantity of soil stabilization and sediment control materials on site equal to 125 percent of that sufficient to protect unprotected, soil-disturbed areas on the project site and shall maintain a detailed plan for the mobilization of sufficient labor and equipment to fully deploy control measures required to protect unprotected, soil-disturbed areas on the project site prior to the onset of precipitation. The Contractor shall include a current inventory of control measure materials and the detailed mobilization plan as part of the SWPPP.

Throughout the winter season, soil-disturbed areas of the project site shall be considered to be nonactive whenever soil disturbing activities are expected to be discontinued for a period of 5 or more days and the areas are fully protected. Areas that will become nonactive either during the winter season or within 20 days thereof shall be fully protected with soil stabilization practices and sediment control measures within 10 days of the discontinuance of soil disturbing activities or prior to the onset of precipitation, whichever is first to occur.

Throughout the winter season, active soil-disturbed areas of the project site shall be fully protected at the end of each day with soil stabilization practices and sediment control measures unless fair weather is predicted through the following work day. The weather forecast shall be monitored by the Contractor on a daily basis. The National Weather Service forecast shall be used, or an alternative weather forecast proposed by the Contractor may be used if approved by the Engineer. If precipitation is predicted prior to the end of the following work day, construction scheduling shall be modified, as required, and the Contractor shall deploy functioning control measures prior to the onset of the precipitation.

The Contractor shall implement, year-round and throughout the duration of the project, control measures included in the SWPPP for sediment tracking, wind erosion, non-storm water management and waste management and disposal.

The Engineer may order the suspension of construction operations which create water pollution if the Contractor fails to conform to the requirements of this section "Water Pollution Control" as determined by the Engineer.

MAINTENANCE.—To ensure the proper implementation and functioning of control measures, the Contractor shall regularly inspect and maintain the construction site for the control measures identified in the SWPPP. The Contractor shall identify corrective actions and time frames to address any damaged measures or reinstate any measures that have been discontinued.

The construction site inspection checklist provided in the Handbook shall be used to ensure that the necessary measures are being properly implemented, and to ensure that the control measures are functioning adequately. The Contractor shall submit one copy of each site inspection record to the Engineer.

Inspections of the construction site shall be conducted by the Contractor to identify deficient measures, as follows:

1. Prior to a forecast storm;
2. After each storm event;
3. At 24 hour intervals during extended precipitation events; and
4. Routinely, on a weekly basis.

If the Contractor or the Engineer identifies a deficiency in the deployment or functioning of an identified control measure, the deficiency shall be corrected by the Contractor immediately, or by a later date and time if requested by the Contractor and approved by the Engineer in writing, but not later than the onset of subsequent precipitation events. The correction of deficiencies shall be at no additional cost to the State.

PAYMENT.—The contract lump sum price paid for prepare storm water pollution prevention plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising and amending the SWPPP as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Attention is directed to Sections 9-1.06, "Partial Payments," and 9-1.07, "Payment After Acceptance," of the Standard Specifications. Payments for prepare storm water pollution prevention plan will be made as follows:

1. After the SWPPP has been approved by the Engineer, 75 percent of the contract item price for prepare storm water pollution prevention plan will be included in the monthly partial payment estimate; and
2. After acceptance of the contract pursuant to Section 7-1.17, "Acceptance of Contract," the remaining 25 percent of the contract item price for prepare storm water pollution prevention plan will be made in accordance with Section 9-1.07.

The contract lump sum price paid for water pollution control shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installing, constructing, maintaining, removing and disposing of control measures, except those shown on the project plans and for which there is a contract item of work, and excluding developing, preparing, obtaining approval of, revising and amending the SWPPP, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Changes in control measures required by an approved amendment to the SWPPP, except changes to those control measures shown on the project plans and for which there is a contract item of work, will be considered extra work, in accordance with Section 4-1.03D of the Standard Specifications and the following:

If the control measure is listed in the approved SWPPP schedule of values, an adjustment in compensation for the contract item for water pollution control will be made by applying the increase or decrease in quantities to the approved schedule of values. No adjustment of compensation will be made to the unit price listed for any item in the schedule of values due to any increase or decrease in the quantities, regardless of the reason for the increase or decrease. The provisions in Section 4-1.03B, "Increased or Decreased Quantities," shall not apply to items listed in the schedule of values.

If the control measure is not listed in the approved SWPPP schedule of values, payment will be made by force account.

Those control measures which are shown on the project plans and for which there is a contract item of work will be measured and paid for as that item of work.

The Engineer will retain an amount equal to 25 percent of the estimated value of the contract work performed during estimate periods in which the Contractor fails to conform to the requirements of this section "Water Pollution Control" as determined by the Engineer.

Retentions for failure to conform to the requirements of this section "Water Pollution Control" shall be in addition to the other retentions provided for in the contract. The amounts retained for failure of the Contractor to conform to the requirements of this section will be released for payment on the next monthly estimate for partial payment following the date that an approved SWPPP has been implemented and maintained, and water pollution is adequately controlled, as determined by the Engineer.

10-1.03 NON-STORM WATER DISCHARGES

Non-storm water discharges shall conform to the requirements in Section 7-1.01G, "Water Pollution" of the Standard Specifications and these special provisions. Conformance with the requirements of this section shall in no way relieve the Contractor from the Contractor's responsibilities, as provided in Section 7-1.11, "Preservation of Property," and Section 7-1.12, "Responsibility for Damage," of the Standard Specifications.

Liquids, Residues and Debris.-- Attention is directed to "Clean and Paint Structural Steel," "Bridge Removal," "Clean Expansion Joints", "Drill and Bond Dowels", "Remove Painted Traffic Stripes", and "Remove Thermoplastic Traffic Stripes" elsewhere in these special provisions. The control and disposal of liquids, residues, and debris associated with "Clean and Paint Structural Steel," "Bridge Removal," and "Clean Expansion Joints" shall be described within the SWPPP, as specified in "Water Pollution Control" of these special provisions. The SWPPP shall, at a minimum, depict and describe the procedural and structural methods of detaining, collecting, and disposing of all liquids, residues, and debris associated with the operations. Sufficient redundancy shall be incorporated into the procedural and structural methods such that the liquids, residues, and debris are not conveyed into or become present in drainage systems, soils, or San Francisco Bay.

Concrete Wastes.-- Attention is directed to "Concrete Structures," "Drill and Bond Dowel (Epoxy Cartridge)," "Drill and Bond Dowels," "Core Concrete," and "Core and Pressure Grout Dowels" elsewhere in these special provisions. The control and disposal of water, abrasives, and residues associated with concrete wastes, including grout and epoxy, shall be described within the SWPPP, as specified in "Water Pollution Control" of these special provisions. The SWPPP shall, at a minimum, depict and describe the procedural and structural methods of detaining, collecting, and disposing of all concrete wastes. Sufficient redundancy shall be incorporated into the procedural and structural methods, such that concrete wastes are not conveyed into or become present in drainage systems, soils, or San Francisco Bay.

Measurement and Payment.-- Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work affected by this section and no additional compensation will be allowed therefor.

10-1.04 TEMPORARY FENCES

Temporary fences shall be furnished and constructed, maintained, and later removed as shown in the Materials Handout, and as directed by the Engineer.

Except as otherwise specified in this section, temporary fences shall conform to the plan details and the specifications for permanent fences of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Used materials may be used providing such used materials are good, sound, and are suitable for the purpose intended.

Materials may be commercial quality providing the dimensions and sizes of said materials are equal to, or greater than, the dimensions and sizes listed in the engineer's estimate and specified by the specifications.

Posts shall be metal.

Galvanizing and painting of steel items will not be required.

Concrete footings for metal posts will not be required.

Temporary fences that are damaged from any cause during the progress of the work shall be repaired or replaced by the Contractor at his expense.

When no longer required for the work as determined by the Engineer, temporary fences shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Removed temporary fence materials that are not damaged may be reused in the permanent work providing such materials conform to all of the requirements specified for the permanent work and such materials are new when used for the temporary fences.

Holes caused by the removal of temporary fences shall be backfilled in accordance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

The temporary fence will be measured and paid for in the same manner specified for permanent fences of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Full compensation for maintaining, removing, and disposing of temporary fences shall be considered as included in price paid per linear foot for temporary fence (Type CL-6) and no additional compensation will be allowed therefor.

10-1.05 COOPERATION

Attention is directed to Sections 7-1.14, "Cooperation," and 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these special provisions.

During the life of this contract, work by State and other agency forces and other contractors may be in progress within or adjacent to the project limits of this contract. The Contractor shall coordinate his operations with those of such other contractors and the State, or other maintenance forces, performing work within these construction limits.

Other San Francisco-Oakland Bay Bridge retrofit projects adjacent to this contract are:

Contract numbers 04-133331, 04-043541, 04-043551, 04-043561, 04-043571, 04-043471, 04-0434L1, and 04-004891 (fender rehabilitation). Contract number 04-150580 (traffic operation system).

Progress schedules of such work by others, when available, may be inspected by the Contractor at the Engineer's office. Such progress schedules are tentative and no guarantee can be made by the State that such work will be performed as indicated by such schedules. The Contractor shall participate in weekly work planning meetings with the Engineer for the purpose of coordinating his work with the work of other contractors, State and other agency forces.

The Contractor shall comply with all security policies of the State concerning the San Francisco-Oakland Bay Bridge.

Full compensation for cooperation and for coordinating operations shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

10-1.06 TRANSPORTATION FOR THE ENGINEER

Attention is directed to Section 5-1.08, "Inspection," of the Standard Specifications and these special provisions.

The Engineer and all authorized representatives of the State, acting within the scope of their duties in connection with the work under this contract, shall be permitted to ride as passengers, without charge on any watercrafts operated by, or for, the Contractor for the transportation of personnel, equipment or materials. It is agreed that that such rides will be taken only on boats, which are making trips in connection with the Contractor's operation. Any personal protective equipment, safety training for state personnel shall be supplied by the Contractor. Full compensation for conforming to the above mentioned requirements shall be considered as included in the contract price paid for the various items of work and no separate payment will be made therefor.

10-1.07 PROGRESS SCHEDULE (CRITICAL PATH)

Progress schedules will be required for this contract. Progress schedules shall utilize the Critical Path Method (CPM).

Definitions - The following definitions apply to this section "Progress Schedule (Critical Path)":

- 1) Activity: Any task, or portion of a project which takes time to complete.
- 2) Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.
- 3) Critical Path Method: A mathematical calculation to determine the longest path of work and relative float represented by a graphic representation of the sequence of activities that shows the interrelationships and interdependencies of the elements composing a project.
- 4) Current Contract Completion Date: The extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in accordance with Section 8-1.06, "Time of Completion," of the Standard Specifications.
- 5) Early Completion Time: The difference in time between the current contract completion date and the Contractor's scheduled early completion date as shown on the accepted baseline schedule, or schedule updates and revisions.
- 6) Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network.
- 7) Fragnet: A section or fragment of the network diagram comprised of a group of activities.
- 8) Hammock Activity: An activity added to the network to span an existing group of activities for summarizing purposes.
- 9) Milestone: A marker in a network which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
- 10) Revision: A change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
- 11) Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, and float.
- 12) Total Float: The amount of time that an activity may be delayed without affecting the total project duration of the critical path.

- 13) Update: The modification of the CPM progress schedule through a regular review to incorporate actual progress to date by activity, approved time adjustments, and projected completion dates.

Preconstruction Scheduling Conference - The Engineer will schedule and conduct a Preconstruction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within seven days after the bidder has received the contract for execution. At this meeting, the requirements of this section of the special provisions will be reviewed with the Contractor. The Contractor shall be prepared to discuss its schedule methodology, proposed sequence of operations, and any deviations it proposes to make from the Stage Construction Plans. At this meeting, the Contractor shall submit its proposed work breakdown structure, the associated alpha-numeric coding structure to implement the work breakdown structure and the activity identification system for labeling all work activities. The Engineer shall review and comment on the work breakdown structure, the coding structure and activity identification system within seven days after submission by the Contractor. The Contractor shall make all modifications to the proposed work breakdown structure, the coding structure and activity identification system that are requested by the Engineer, and shall employ that coding, structure and system in its baseline schedule submission.

Interim Baseline Schedule - Within 10 days after approval of the contract, the Contractor shall submit to the Engineer an interim baseline project schedule which will serve as the progress schedule for the first 120 days of the project, or until the baseline schedule is accepted, whichever is sooner. The interim baseline schedule shall utilize the critical path method. The interim baseline schedule shall depict how the Contractor plans to perform the work for the first 120 days of the contract. Additionally, the interim baseline schedule shall show all submittals required early in the project, and shall provide for all permits, and other non-work activities necessary to begin the work. The interim baseline schedule submittal shall include a diskette which contains the data files used to generate the schedule.

The Engineer shall be allowed 15 calendar days to review and accept or reject the interim baseline schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 calendar days of receipt by the Contractor of the Engineer's comments, at which time a new 15-calendar day review period by the Engineer will begin.

Baseline Schedule - Within 30 days after approval of the contract, the Contractor shall submit to the Engineer a baseline project schedule. The baseline schedule shall include the activities shown on the interim baseline schedule in the same order and logical relationship as shown in the interim baseline schedule. The baseline project schedule shall have a data date of the day prior to the first working day of the contract and shall not include any completed work to-date. The baseline progress schedule shall meet interim target dates, milestones, stage construction requirements, internal time constraints, show logical sequence of activities, and must not extend beyond the number of days originally provided for in the contract.

The baseline CPM schedule submitted by the Contractor shall have a sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. The baseline schedule shall depict how the Contractor plans to complete the whole work involved, and shall show all activities that define the critical path.

The baseline progress schedule shall be supplemented with resource allocations for every activity, to a level of detail that facilitates report generation based on labor craft and equipment class for the Contractor and subcontractors. The Contractor shall use average composite crews to display the labor loading of on-site construction activities. The Contractor shall optimize and level labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not duplicated in concurrent activities. The Contractor shall require each subcontractor to submit in writing a statement certifying that the subcontractor has concurred with the Contractor's CPM, including major updates, and that the subcontractor's related schedule has been incorporated accurately, including the duration of activities and labor and equipment loading. Along with the baseline progress schedule, the Contractor shall also submit to the Engineer time-scaled resource histograms of the labor crafts and equipment classes to be utilized on the contract.

The Engineer shall be allowed 15 calendar days to review and accept or reject the baseline project schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 calendar days, at which time a new 15-calendar day review period by the Engineer will begin.

Project Schedule Reports - Schedules submitted to the Engineer including baseline and interim baseline schedules shall include time scaled network diagrams. Network diagrams shall be based on early start and early finish dates of activities shown. The network diagrams submitted to the Engineer shall also be accompanied by the computer-generated mathematical analysis tabular reports for each activity included in the project schedule. Three different report sorts shall be provided: Early Start, Total Float, and Activity Number, which shall show all predecessors and successors for each activity. The mathematical analysis tabular reports (8 1/2" x 11" size) shall be submitted to the Engineer and shall include, at a minimum, the following:

- 1) Data date
- 2) Predecessor and successor activity numbers and descriptions;

- 3) Activity number and description;
- 4) Activity codes;
- 5) Schedule, and actual and remaining duration for each activity;
- 6) Earliest start date (by calendar date);
- 7) Earliest finish date (by calendar date);
- 8) Actual start date (by calendar date);
- 9) Actual finish date (by calendar date);
- 10) Latest start date (by calendar date);
- 11) Latest finish date (by calendar date);
- 12) Identify actual non-working days
- 13) Identify activity calendar type
- 14) Float, in work days;
- 15) Percentage of activity complete and remaining duration for incomplete activities; and
- 16) Imposed constraints.

Networks shall be drafted time scaled to show a continuous flow of information from left to right. The primary paths of criticality shall be clearly and graphically identified on the networks. The network diagram shall be prepared on E-size sheets (36" x 48"), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks shall be subject to the approval of the Engineer.

Schedule network diagrams and computer tabulations shall be submitted to the Engineer for acceptance in the following quantities:

- a) 2 sets of the Network Diagrams;
- b) 2 copies of the computer tabulation reports (8 1/2" x 11" size); and
- c) 3 computer diskettes.

Should the baseline schedule or schedule update, submitted for acceptance, show variances from the requirements of the contract, the Contractor shall make specific mention of the variations in the letter of transmittal, in order that, if accepted, proper adjustments to the project schedule can be made. The Contractor will not be relieved of the responsibility for executing the work in strict accordance with the requirements of the contract documents. In the event of a conflict between the requirements of the contract documents and the information provided or shown on an accepted schedule, the requirements of the contract documents shall take precedence.

Each schedule submitted to the Engineer shall comply with all limits imposed by the contract, with all specified intermediate milestone and completion dates, and with all constraints, restraints or sequences included in the contract. The degree of detail shall include factors including, but not limited to:

- 1) Physical breakdown of the project;
- 2) Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of work shown in the contract, the planned substantial completion date, and the final completion date;
- 3) Type of work to be performed, the sequences, and the major subcontractors involved;
- 4) All purchase, submittals, submittal reviews, manufacture, tests, deliver, and installation activities for all major materials and equipment.
- 5) Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review. The same time frame shall be allowed for at least one resubmittal on all major submittals so identified in the contract documents;
- 6) Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, railroads, and utilities as shown on the plans or specified in the specifications;
- 7) Identification of each and every utility relocation and interface as a separate activity, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved.
- 8) Actual tests, submission of test reports, and approval of test results;
- 9) All start-up, testing, training, and assistance required under the Contract;
- 10) Punchlist and final clean-up;
- 11) Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours; and
- 12) Identification of each and every ramp closing and opening event as a separate one-day activity, including designation by activity coding and description that it is a north-bound, south-bound, east-bound, west-bound, and entry or exit ramp activity.

Each construction activity shall have a duration of not more than 20 working days, and not less than one working day unless permitted otherwise by the Engineer. All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor. The baseline schedule shall not attribute negative float to any activity. Float shall not be considered as time for the exclusive use of or benefit of either the State or the Contractor but shall be considered as a jointly owned, expiring resource available to the project and shall not be used to the financial detriment of either party. Any accepted schedule, revision or update having an early completion date shall show the time between the early completion date and the current Contract Completion Date as "project float".

The Contractor shall be responsible for assuring that all work sequences are logical and the network shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of work required for the performance of the contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the contract. If the Contractor fails to define any element of work, activity or logic, and the omission or error is discovered by either the Contractor or the Engineer, it shall be corrected by the Contractor at the next monthly update or revision of the schedule.

Monthly Update Schedules - The Contractor shall submit a Monthly Update Schedule to the Engineer once in each month. The proposed update schedule prepared by the Contractor shall include all information available as of the 20th calendar day of the month, or other date as established by the Engineer. A detailed list of all proposed schedule changes such as logic, duration, lead/lag, additions and deletions shall be submitted with the update.

The monthly update schedule submitted to the Engineer shall be accompanied by a Schedule Narrative Report. The Schedule Narrative Report shall describe the physical progress during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float predictions, and an explanation of potential delays or problems and their estimated impact on performance, milestone completion dates and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay or cost increases shall be included for consideration by the Engineer. The report shall follow the outline set forth below:

Contractor's Schedule Narrative Report Outline:

- 1) Contractor's Transmittal Letter
- 2) Work completed during the period
- 3) Description of the current critical path
- 4) Description of problem areas
- 5) Current and anticipated delays
 - a) Cause of the delay
 - b) Corrective action and schedule adjustments to correct the delay
 - c) Impact of the delay on other activities, milestones, and completion dates
- 6) Changes in construction sequences
- 7) Pending items and status thereof
 - a) Permits
 - b) Change Orders
 - c) Time Extensions
 - d) Non-Compliance Notices
- 8) Contract completion date(s) status
 - a) Ahead of schedule and number of days
 - b) Behind schedule and number of days
- 9) Include updated Network Diagram and Reports

The Contractor shall provide to the Engineer a 3 1/2" electronic disk of the schedule, together with printed copies of the network diagrams and tabular reports described under "Project Schedule Reports", and the Schedule Narrative Report.

The monthly update of the schedule shall be for the period from the last update to the current cut-off date, and for the remainder of the project. The current period's activities shall be reported as they actually took place and designated as actually complete, if actually completed, in the schedule updates.

Portions of the network diagram on which all activities are complete need not be reprinted and submitted in subsequent updates. However, the electronic disk file of the submitted schedule and the related reports shall constitute a clear record of progress of the work from award of contract to final completion.

The Contractor will be permitted to show early or late completion on schedule updates and revisions. The Engineer may use the updates and revisions, and other information available, in evaluating the effect of changes, delays, or time

savings on the critical path and the accepted schedule current at the time to determine if there is an applicable adjustment of time, if any, to any target date or completion date due to the changes, delays, or time savings.

On a date determined by the Engineer, the Contractor shall meet with the Engineer to review the monthly schedule update. At the monthly progress meeting, the Contractor and the Engineer will review the updated schedule and will discuss the content of the Narrative Report. The Engineer shall be allowed 15 days after the meeting to review and accept or reject the update schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 15 calendar days, at which time a new 15-calendar day review period by the Engineer will begin.

Schedule Revisions - If the Contractor desires to make a change to the accepted schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change, and proposed revisions to activities, logic and duration. The Contractor shall submit for acceptance the affected portions of the project schedule and an analysis to show the effect on the entire project. The Engineer will provide a response within 10 days. No revision to the accepted baseline schedule or the schedule updates shall be made without the prior written approval of the Engineer.

The Engineer will request the Contractor to submit a proposed revised schedule within 15 days when:

- a) there is a significant change in the Contractor's operations that will affect the critical path;
- b) the current updated schedule indicates that the contract progress is 30 calendar days or more behind the planned schedule, as determined by the Engineer; or
- c) the Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, contract progress, or work by other contractors.

The Engineer shall be allowed 15 days to review and accept or reject a schedule revision. Rejected schedule revisions shall be revised and resubmitted to the Engineer within 15 calendar days, at which time a new 15-calendar day review period by the Engineer will begin. Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor.

Schedule Time Extension Requests - When the Contractor requests a time extension due to contract change orders or delays, the Contractor shall submit to the Engineer a written Time Impact Analysis illustrating the influence of each change or delay on the current contract completion date or milestone completion date, utilizing the current accepted schedule. Each Time Impact Analysis shall include a fragnet demonstrating how the Contractor proposes to incorporate the Change Order or delay into the current schedule. The fragnet shall include the sequence of new and existing activity revisions that are proposed to be added to the accepted baseline project schedule or current schedule in effect at the time the change or delay is encountered, to demonstrate the influence of the delay and the proposed method for incorporating the delay and its impact into the schedule.

Each Time Impact Analysis shall demonstrate the estimated time impact based on the events of delay, the anticipated or actual date of the contract change order work performance, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the current schedule in effect at the time the change or delay was encountered.

Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities at the time of actual delay, or at the time the contract change order work is performed. Float time is not for the exclusive use or benefit of the Engineer or the Contractor, but is an expiring resource available to all parties as needed to meet contract milestones and the contract completion date. Time extensions will not be granted nor will delay damages be paid unless:

- a) the delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and,
- b) the delay extends the actual performance of the work beyond the applicable current contract completion date and the most recent date predicted for completion of the project on the accepted schedule update current as of the time of the delay or as of the time of issuance of the contract change order.

Time Impact Analyses shall be submitted in triplicate within 15 days after the delay occurs or after issuance of the contract change order.

Approval or rejection of each Time Impact Analysis by the Engineer will be made within 15 days after receipt of the Time Impact Analysis, unless the review is delayed by subsequent meetings and negotiations. A copy of the Time Impact Analysis approved by the Engineer shall be returned to the Contractor and the accepted schedule revisions illustrating the influence of the contract change orders or delays shall be incorporated into the project schedule during the first update after approval.

Final Schedule Update - Within 15 days after the acceptance of the contract by the Director, the Contractor shall submit a final update of the schedule with actual start and actual finish dates for all activities. This schedule submission

shall be accompanied by a certification, signed by an officer of the company and the Contractor's Project Manager stating "To the best of my knowledge, the enclosed final update of the project schedule reflects the actual start and completion dates of the activities contained herein."

Equipment and Software - The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The minimum computer system to be furnished shall include the following:

- 1) Complete computer system, including keyboard, mouse, 17 inch color SVGA monitor (1,024x768 pixels), Intel Pentium 200 MHZ micro processor chip, or equivalent, or better.
- 2) Computer operating system software, compatible with the selected processing unit, for Windows 95 or later, or equivalent.
- 3) Minimum sixty-four (64) megabytes of random access memory (RAM).
- 4) A two-gigabyte minimum hard disk drive, a 1.44 megabyte 3 1/2 inch floppy disk drive, 16x speed minimum CD-ROM drive, and ethernet card.
- 5) A color-ink-jet plotter with a minimum 8 megs RAM, capable of 300 dots per inch color, 600 dots per inch monochrome, or equivalent plotter capable of printing fully legible, timescaled charts, and network diagrams, in four colors, with a minimum size of 36 inches by 48 inches (E size) and is compatible with the selected system.
- 6) CPM software shall be Primavera Project Planner, version 2.0 for Windows 95, or later.

The computer hardware and software furnished shall be compatible with that used by the Contractor for the production of the CPM progress schedule required by the Contract, and shall include original instruction manuals and other documentation normally provided with the software.

The Contractor shall furnish, install, set up, maintain and repair the computer hardware and software ready for use at a location determined by the Engineer. The hardware and software shall be installed and ready for use by the first submission of the baseline schedule. The Contractor shall provide 24 hours of formal training for the Engineer in the use of the hardware and software to include schedule analysis, reporting, resource and cost allocations.

All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims involving contract progress are pending. When claims involving contract progress are pending, computer hardware or software shall not be removed until the final estimate has been submitted to the Contractor.

Payment - Progress schedule (critical path) will be paid for at a lump sum price. The contract lump sum price paid for progress schedule (critical path) shall include full compensation for furnishing all labor, materials (including computer hardware and software), tools, equipment, and incidentals; and for doing all the work involved in preparing, furnishing, updating and revising CPM progress schedules; maintaining and repairing the computer hardware; and training the Engineer in the use of the computer hardware and software; as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for progress schedule (critical path) will be made as follows:

Interim baseline schedule accepted, then 10 percent payment for progress schedule (critical path) will be made.

Baseline schedule accepted, then 10 percent payment for progress schedule (critical path) will be made.

Monthly update schedules accepted, then 75 percent payment for progress schedule (critical path) will be made equally for each update.

Final schedule update accepted, then 5 percent payment for progress schedule (critical path) will be made.

The Department will retain an amount equal to 25 percent of the estimated value of the work performed during the first estimate period in which the Contractor fails to submit an interim baseline, baseline, revised or updated CPM schedule conforming to the requirements of this section, as determined by the Engineer. Thereafter, on subsequent successive estimate periods the percentage the Department will retain will be increased at the rate of 25 percent per estimate period in which acceptable CPM progress schedules have not been submitted to the Engineer. Retentions for failure to submit acceptable CPM progress schedules shall be additional to all other retentions provided for in the contract. The retention for failure to submit acceptable CPM progress schedules will be released for payment on the next

monthly estimate for partial payment following the date that acceptable CPM progress schedules are submitted to the Engineer.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications, shall not apply to the item of progress schedule (critical path). Adjustments in compensation for the project schedule will not be made for any increased or decreased work ordered by the Engineer in furnishing project schedules.

10-1.08 ELECTRONIC MOBILE DAILY DIARY COMPUTER SYSTEM

The Contractor shall provide for the State's exclusive possession and use a complete electronic mobile daily diary computer system, to allow State personnel to record observation (diary) data in the field using Personal Digital Assistants (PDAs), and in the office using desktop workstation(s). Recorded data will be uploaded to a database maintained on an Oracle server. Diary information in the database shall be capable of being edited and printed in the form of an Engineer's Daily Report from desktop workstations connected to the database via a local area network. The system shall also provide other reports required by the Engineer, as well as user friendly and rapid retrieval of daily reports and other information from the database for research purposes.

The Engineer may use the furnished computer hardware, software, and instruction manual for any purposes related to the subject project. Before delivery and set up of the computer system the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims are pending and after the final estimate has been submitted to the Contractor.

The electronic mobile daily diary computer system furnished shall meet the requirements described below for function, data, hardware, and support.

FUNCTIONAL REQUIREMENTS.--The Contractor shall provide, not later than 11 days after contract award, a computer system that complies with the following minimum functional specifications:

DATA COLLECTION SUBSYSTEM.--

1. Accept input of observation data.

General Data.--Allow input of data that applies to all observation data sets:

- Inspector ID: agency-specific code; allow up to 10 alphanumeric characters.
- Inspector password: general text field; allow up to 10 characters.
- Inspector name: general text field; allow up to 30 characters.
- Inspector title: general text field; allow up to 30 characters.

Daily Contract Observation Data.--Collect one or more contract observation data sets per contract per inspector per day:

- Observation date: month, day & year.
- Contract ID: agency-specific code; allow up to 15 alphanumeric characters.
- Uniqueness guarantor: time and time of creation of the data set.
- Weather condition, am and pm: agency-specific code of up to 10 alphanumeric characters.
- Temperature, high and low: signed numeric value of up to 3 digits (degrees Fahrenheit or Celsius).
- Humidity, high and low: percentage value (0 to 100%).
- Start and stop time for inspector shift (24-hour clock; values at the half hour).
- Start and stop time for jobsite shift (24-hour clock; values at the half hour).
- Level of inspection: values are "continuous", "intermittent" and "no inspection".
- Inspector signature: digital image of signature.

Laborer Observation Data.--Collect multiple labor observations per observation data set:

- Contract item or Contract Change Order (CCO): sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- Critical Path Method network (CPM) activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Laborer name: last, first, & middle initial.

- Labor classification: agency-specific code; allow up to 10 alphanumeric characters.
- Trainee status: Boolean value.
- Hours: numeric value (0 to 24; up to 2 places behind the decimal point).
- Hours type flag: flag value to indicate regular vs. overtime hours.
- Force account flag: Boolean value (CCO observations only).

Equipment Observation Data.--Collect multiple equipment observations per observation data set:

- Contract item or CCO: sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Equipment ID: contractor-specific code; allow up to 10 alphanumeric characters.
- Equipment description ("new" equipment only): general text field; allow up to 60 characters.
- Rental status: Boolean value.
- Hours: numeric value (0 to 24; up to 2 places behind the decimal point).
- Hours type flag: flag value to indicate regular vs. overtime vs. idle hours.
- Force account flag: Boolean value (CCO observations only).

Pay Items Observation Data.--Collect multiple pay items observations per observation data set:

- Contract item or CCO: sequential number; allow up to 6 digits.
- Contractor ID: agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 characters.
- Load ticket ID: Contractor-specific value; allow up to 15 alphanumeric characters.
- Quantity: numeric value; floating point (11,2) specification.
- Lot number: Contractor-specific value; allow up to 15 alphanumeric characters.
- Lab release number: Contractor-specific value; allow up to 15 alphanumeric characters.
- Force account flag: Boolean value (CCO observations only).
- Units type (force account observations only): agency-specific code; allow up to 10 alphanumeric characters.
- Material type (force account observations only): general text field; allow up to 60 characters.

Remarks Data.--Collect multiple remarks per observation data set:

- Contract item or CCO (optional): sequential number; allow up to 6 digits.
- Contractor ID (optional): agency-specific code; allow up to 10 alphanumeric characters.
- CPM activity code: agency-specific code; allow up to 10 alphanumeric characters.
- Structure/Line: agency-specific code; allow up to 10 alphanumeric characters.
- Location/Station: general text field; allow up to 60 alphanumeric characters.
- Remark type: agency-specific code; allow up to 10 alphanumeric characters.
- Remark text: general text field; allow up to 2,000 characters.
- Force account flag: Boolean value (CCO observations only).

2. Provide meaningful display of coded information.

- Display contract descriptions in addition to contract numbers.
- Display item/CCO descriptions in addition to item/CCO numbers.
- Display CPM activity descriptions in addition to CPM activity codes.
- Display Contractor names in addition to Contractor IDs.
- Display equipment descriptions in addition to equipment IDs.
- Display labor classification descriptions in addition to labor classification codes.
- Display material types and units of measure based on contract item number.
- Display weather condition descriptions in addition to weather condition codes.

3. Facilitate entry of inspection data.

In general, methods of data entry shall require the minimum number of actions or keystrokes from the user as is practical.

- Provide pick lists from the central database for entry of the following fields:
 - Contract numbers.
 - Contract item numbers.
 - Contractor IDs.
 - Laborers.
 - Labor classifications.
 - Equipment.
 - Remark types.
 - Weather conditions (am and pm).
 Also provide alphabetical tabs for navigating the list of laborer.
- Provide option of handwriting or typewriter keypad entry for the following fields:
 - Inspector ID, password, name, and title.
 - CPM activity code.
 - Load ticket number.
 - Lot number.
 - Lab release number.
 - Materials location.
 - Remark text.
 - Laborer name for “new” people.
 - Equipment ID and description for “new” equipment.
- Provide option of handwriting or numeric keypad entry for the following fields:
 - Contract item number.
 - Materials quantity.
 - Temperatures (high and low).
 - Humidity (high and low).
- Provide “clock” controls for entry of the following fields:
 - Inspector shift hours.
 - Jobsite shift hours.
 - Hours (labor & equipment observations).
- Provide calendar keypad entry for the following fields:
 - Observation date.
- Provide checkboxes for entry of the following Boolean fields:
 - Trainee status.
 - Rental status.
 - Force account status.
- Provide radio buttons for entry of the following fields:
 - Hours type flag (regular, overtime, idle).
- Provide popup menu for entry of the following fields:
 - Level of inspection.
- Copy into labor & equipment observations relevant ratebook codes and values from the central database.
- Provide option to use handwriting or typewriter keypad to enter equipment ID for equipment observations and look up the corresponding piece of equipment, as an alternative to choosing the piece of equipment from a list.
- Provide option to change the labor classification for a labor observation even if the laborer name and classification have been selected from a list (to allow observations of laborers working out of their normal classes).

4. Store observation data sets.

- Store all entered data on the mobile platform for up to 100 observations (any combination of types) per contract observation data set.

- Store data for up to 30 observation data sets on the mobile platform.
 - Store or backup data on non-volatile memory to guard against data loss.
5. Support review and modification of observation data sets.
- Allow user to select observation data sets from a list by identifying:
 - Engineer ID.
 - Observation date.
 - Contract number.
 - Once a data set is selected, display all observation entries in an overview list. Allow list to be sorted by observation type, contract item, or Contractor. Also allow list to be restricted by observation type (labor, equipment, materials, or remarks) so that additional data can be displayed for the observations (e.g., labor name, hours & hours type for labor entries).
 - Provide option to duplicate observation entries from the list, optionally setting item number & hours fields to new values.
 - Allow list entries to be selected and edited.
 - Allow user to update weather condition and shift hour data.
 - Allow user to duplicate entire observation data sets to a new date selected by the user.
 - Allow user to delete observation data sets (after confirmation).
6. Communicate with database server to upload diaries and download control tables.
- Allow user to mark diaries as “done” and collect a signature image at that time. After the diary has been signed, prohibit any other modifications to the diary. If diary is marked “undone” then allow modifications but throw away signature, so that a new signature is always required at whatever point the diary is marked “done” (i.e., ready for transmission).
 - Connect to communications server via direct serial connection, providing database user ID and password.
 - Send observation data.
 - Select for transmission all observation data sets marked “done” that have not yet been transmitted.
 - Output a serial stream containing the observation data sets to be transmitted.
 - Display status during transmission and provide confirmation that data was sent to the server.
 - Set a flag in transmitted data sets to indicate that they have been transmitted.
 - Be capable of handling unexpected interruptions in the communication link.
 - Receive control table data.
 - Automatically request all necessary control table downloads, providing both user ID and date of last download.
 - Accept a serial stream containing control table updates.
 - Display status during transmission and provide confirmation that data was received from the server.
 - Set the date of last update for received control tables.
 - Be capable of handling unexpected interruptions in the communication link.
7. Provide additional productivity support.
- Display a list of names with addresses, phone numbers, radio call numbers and vehicle IDs. List entries must be transparently downloaded from a central database along with other control table data.
 - Provide a programmable scientific calculator option.
8. Provide adequate hardware functionality for hand-held computer.
- Allow data (other than signature image) to be entered with choice of either pen or keyboard.
 - Weigh less than 2 pounds.
 - Battery to have a life of at least 4 continuous hours between chargings.
 - Provide “instant on” capability.
 - Operate within a temperature range of 32 to 104 degrees Fahrenheit (similar to most electronic calculators).
 - Backlit screen

DATABASE COMMUNICATION SUBSYSTEM.--

1. Connect to mobile platform and database server:
 - Connect to mobile platform via direct serial connection.
 - Accept database user ID and password from mobile platform.
 - Use the user ID and password to connect to Oracle database for read/write access, either locally or across a local area network.
2. Upload observation data.
 - Accept upload requests and data from the mobile device.
 - Drive data recognition and database write functions from an editable configuration file.
 - Write observation data to an Oracle database.
 - Be capable of handling unexpected interruptions in the communication link.
3. Download control data.
 - Accept download requests from the mobile device.
 - Drive data selection and database read functions from an editable configuration file and information (user ID and date of last download) supplied by the mobile device, to limit downloads to only the required data.
 - Read information from an Oracle database and output it to the mobile device.
 - Be capable of handling unexpected interruptions in the communication link.
4. Output audit and debugging data.
 - Provide an option to create archive files for data uploads.
 - Provide an option to create trace file output for data uploads.
5. Provide status/feedback on server operations.
 - Display status and information regarding in-progress data transmissions.
 - Provide optional trace window to display low-level actions of the server application in readable form.
6. Allow administrator to control the server application.
 - Allow administrator to start/stop communication activity.
 - Allow administrator to select connection port and configuration file.
 - Allow administrator to select archive and trace options.

Data Access Subsystem

1. Connect to database server and validate user name and password for authority to access data.
2. View observation data:
 - Retrieve observation data sets based on any combination of the following: date, inspector, contract item number, CCO number, and CPM activity code.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Print observation data sets in a paper version of Daily Diaries. Diaries shall include the following information:
 - First page header: Caltrans logo, contract number & description, date, workday, jobsite and inspector shift hours, weather am/pm, temperature hi/lo, humidity hi/lo, inspector name and signature, page number.
 - Subsequent page header: contract number & description, date, workday, inspector name, page number.
 - Report body: summary of items of work performed, list of laborers, list of equipment, list of pay items, list of general remarks; each section sorted by Structure/Line.
 - Report footer: “end of report” indicator.
 - Print a special “CCO diary” to show only observations for a specified CCO.
 - Print a special “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the California Department of Transportation (Caltrans) construction workday for each diary.

3. Edit observation data:
 - Retrieve observation data sets based on inspector and approval status.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Allow observation data sets to be edited on-line.
 - Allow observation data sets to be created on-line.
 - Allow remark text to be imported from text files.
 - Print observation data sets in a paper version of Daily Diaries.
 - Print “CCO diary” to show only observations for a specified CCO.
 - Print “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the Caltrans construction workday for each diary.
4. Approve observation data:
 - Retrieve observation data sets based on inspector, supervisor, and approval status.
 - Display observation data sets on-line in a screen version of Daily Diaries.
 - Allow observation data sets to be approved or rejected on-line.
 - Print observation data sets in a paper version of Daily Diaries.
 - Print “CCO diary” to show only observations for a specified CCO.
 - Print “activity diary” to show only observations for a specified CPM activity.
 - Compute and display/print the Caltrans construction workday for each diary.
5. Report observation data.
 - Display/print an inspector work summary report by date, supervisor, inspector, contract.
 - Display/print a labor compliance report by date, Contractor, employee, contract.
 - Display/print an item detail report for labor hours by date, Contractor, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for equipment hours by date, Contractor, equipment ID, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for pay items by date, Contractor, contract, item/CCO/activity, structure/line.
 - Display/print an item detail report for remarks by date, remark type, contract, item/CCO/activity, structure/line.
 - Display/print an extra work report for labor hours by date, Contractor, contract, CCO.
 - Display/print an extra work report for equipment hours by date, Contractor, equipment ID, contract, CCO.
 - Display/print an extra work report for pay items by date, Contractor, contract, CCO.
6. Prepare source sheets for use in pay estimates.
 - Allow source sheets to be selected by contract, item and month.
 - Provide storage for estimate data on a per-item basis:
 - Original estimate quantity, changes due to CCO, and current estimate quantity.
 - Quantity previously paid, quantity paid this month, total paid to date.
 - Automatically retrieve all pay item observations for the given item and the given month and calculate the total.
 - Allow monthly total to be adjusted and reason for adjustment to be recorded.
 - Print the resulting source sheets.
7. Allow maintenance of control table data in the Oracle database:
 - Provide the ability to add, modify or delete entries in the database control tables:
 - Users (inspectors).
 - Weather conditions.
 - Labor classifications
 - Remark types.
 - Titles.
 - Name/phone list.

- Contractors.
 - Laborers.
 - Equipment.
 - Contracts.
 - Contract items.
 - CCOs.
 - CPM activity codes.
 - Inspector assignments to contracts.
 - Contractor assignments to contract items.
- Provide the ability to import lists of laborers & equipment from contractors into the database.
 - Maintain integrity of database constraints during edit and import processes.
8. Provide the capability of generating diagnostic reports to identify the following:
- Duplication of labor, equipment, and materials entries on all diaries for any given date.
 - Notification of labor and equipment entries as “new”.

HARDWARE REQUIREMENTS.--The Contractor shall furnish all hardware required for the electronic mobile daily diary computer system, including PDAs, desktop systems, servers, printers, and miscellaneous hardware. The minimum requirements for the various classes of hardware are as follows:

- PDA: Apple Newton 2000 Message Pad, or 100% compatible with 5 MB RAM card, 8MB ROM charging station, carrying case, and Newton OS 2.0.
- Desktop: Complete computer system, including keyboard, mouse and monitor, using the latest available Intel Pentium processor, or equivalent with minimum of sixty-four (64) megabytes of random access memory (RAM), three-gigabyte minimum hard disk drive, 1.44 megabyte 3 1/2 inch floppy disk drive, 16x speed minimum CD-ROM drive, 17-inch minimum monitor capable of at least 1,024 x 768 pixels, and Windows NT user (client) license.
- Printer: HP LaserJet 5-series or 100% compatible.
- Network: Ethernet network with twisted-pair wiring and passive hub.

The Contractor shall supply hardware for the system in the following quantities:

- 35 – PDA and accessories as described above.
- 04– desktop workstations as described above.
- 01– printers as described above.
- as need it – misc. network hardware and cables as described above.
- 06 – PDA keyboards.
- 04 – PDA print packs.
- 35– Oracle Workgroup Server licenses.
- 200 - WriteRight screen enhancers
- 100 - Replacement styluses for PDAs

SUPPORT REQUIREMENTS.--The Contractor shall furnish all support required for the electronic mobile daily diary computer system. The minimum requirements for support are as follows:

- Installation: initial on-site installation and verification of hardware, software and networks.
- Training: initial on-site training for one half day for up to (35) Caltrans inspectors and database/system administrators.
- Telephone and e-mail support: the Caltrans system administrator may submit operational questions by telephone during normal business hours or by electronic mail at any time. Emergencies will receive immediate attention, and other questions will be answered within one business day.
- Software updates: occasional maintenance updates to the application software, as available.
- On-site visits: scheduled visits to the installation site to check system operation, provide “refresher” or advanced training as applicable, install software updates, as agreed with the Engineer.

The Contractor shall furnish support required for the Electronic Mobile Daily Diary Computer System for a period of 24 months following award of contract.

PAYMENT.--Mobile Daily Diary Computer System will be paid at a lump sum price.

The contract lump sum price paid for electronic mobile daily diary computer system shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in supplying the mobile daily diary computer system, complete and in place, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payment for providing and implementing this mobile daily diary computer system will be made on a lump sum basis, in 4 milestones as follows:

Milestone 1: This milestone will be satisfied upon delivery and installation of hardware and database software as described under "Hardware Requirements", above. Payment for milestone 1 will equal 45% of total item lump sum cost.

Milestone 2: This milestone will be satisfied upon acceptance of the system by the Engineer as functionally complete per these specifications. Payment for milestone 2 will equal 25% of total item lump sum cost.

Milestone 3: This milestone will be satisfied upon completion of initial training for Department personnel. Training shall be held at a time and location approved by the Engineer. Payment for milestone 3 will equal 15% of total item lump sum cost.

Milestone 4: This milestone will be satisfied upon completion of the third of three feedback sessions between the Electronic Mobile Daily Diary Computer System vendor and Department engineers. Payment for milestone 4 will equal 15% of total item lump sum cost.

10-1.09 ELECTRONIC MOBILE DAILY DIARY SYSTEM DATA DELIVERY

Attention is directed to Sections 5-1.10, "Equipment and Plants," and 7-1.01A(3), "Payroll Records," of the Standard Specifications, and these special provisions.

The Contractor shall submit to the Engineer a list of each piece of equipment and its identifying number, type, make, model and rate code in accordance with the Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rate" which is in effect on the date upon the work is performed, and the names, labor rates and work classifications for all field personnel employed by the Contractor and all subcontractors in connection with the public work, together with such additional information as is identified below. This information shall be updated and submitted to the Engineer weekly through the life of the project.

This personnel information will only be used for this mobile daily diary computer system and it will not relieve the Contractor and subcontractors from all the payroll records requirements as required by Section 7-1.01A(3), "Payroll Records," of the Standard Specifications.

The Contractor shall provide the personnel and equipment information not later than 11 days after the contract award for its own personnel and equipment, and not later than 5 days before start of work by any subcontractor for the labor and equipment data of that subcontractor.

The minimum data to be furnished shall comply with the following specifications:

Data Content Requirements.--

1. The Contractor shall provide the following basic information for itself and for each subcontractor that will be used on the contract:

| | |
|---|------------------------------------|
| Company name. | Alphanumeric; up to 30 characters. |
| Address (line 1). | Alphanumeric; up to 30 characters. |
| Address (line 2). | Alphanumeric; up to 30 characters. |
| Address (city). | Alphanumeric; up to 30 chars. |
| Address (2-letter state code). | Alphanumeric; up to 2 characters. |
| Address (zip code) | Alphanumeric; up to 14 characters. |
| Contact name. | Alphanumeric; up to 30 characters |
| Telephone number (with area code). | Alphanumeric; up to 20 characters. |
| Company code: short company name. | Alphanumeric; up to 10 characters. |
| DBE status (Caltrans-supplied codes) | Alphanumeric; up to 10 characters. |
| Ethnicity for DBE status (Caltrans-supplied codes). | Alphanumeric; up to 10 characters. |
| List of laborers to be used on this contract (detail specified below). | |
| List of equipment to be used on this contract (detail specified below). | |

For example, one such set of information for a company might be:

XYZ Company, Inc.
1240 9th Street Suite 600
Oakland, CA 94612
John Smith
(510) 834-9999
XYZ
MBE
Black

2. The Contractor shall provide the following information for each laborer who will be used on the contract:

| | |
|---|------------------------------------|
| Company code (as defined above). | Alphanumeric; up to 10 characters. |
| Last name. | Alphanumeric; up to 20 characters. |
| First name. | Alphanumeric; up to 15 characters. |
| Middle initial. | Alphanumeric; up to 1 characters. |
| Labor classification (Caltrans-provided codes). | Alphanumeric; up to 10 characters. |
| Hourly rate. | Alphanumeric; up to (6,2) |
| Trainee status (Y/N). | Alphanumeric; up to 1 characters |
| Ethnicity (Caltrans-provided codes). | Alphanumeric; up to 10 characters. |
| Ethnicity (Caltrans-provided codes). | Alphanumeric; up to 10 characters. |
| Gender. | Alphanumeric; up to 1 characters. |

For example, one such set of information might be:

XYZ
Gonzalez
Hector
V
OPR
22.75
N
Hispanic
M

3. The Contractor shall provide the following information for each piece of equipment that will be used on the contract:

| | |
|---|------------------------------------|
| Company code (as defined above). | Alphanumeric; up to 10 characters. |
| Company's equipment ID number. | Alphanumeric; up to 10 characters. |
| Company's equipment description. | Alphanumeric; up to 60 characters. |
| Equipment type (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment make (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment model (from Caltrans ratebook). | Alphanumeric; up to 60 characters. |
| Equipment rate code (from Caltrans ratebook). | Alphanumeric; up to 10 characters |
| Hourly rate. | Alphanumeric; up to (6,2) |

For example, one such set of information might be:

XYZ
B043
CAT TRACTOR D-6C
TRACC
CAT
D-6C
3645
28.08

Data Delivery Requirements.--

Contract No. 04-043004

1. All data described in "Data Requirements" of this section shall be delivered to the Department electronically, on 3 1/4" floppy disks compatible with the Microsoft Windows operating system. The Contractor shall provide a weekly disk and hard copy of the required correct updated personnel and equipment information for the Contractor and all the subcontractors and verified correct by the Engineer.
2. Data of each type of described in the previous section (contractor, labor, and equipment information) will be delivered separately, each type in one or more files on floppy disk. Any given file may contain information from one contractor or from multiple contractors, but only one type of data (contractor, labor, or equipment information).
3. The file format for all files delivered to Caltrans shall be standard tab-delimited, plain text files. Characteristics of this type of file are:
 - All data is in the form of plain ASCII characters.
 - Each row of data (company, person, equipment) is delimited by a carriage return character.
 - Within rows, each column (field) of data is delimited by a tab character. This type of file is the most standard type for interchange of formatted data; it can be created and read by all desktop spreadsheet and desktop database applications.
4. The files shall have the following columns (i.e., each row shall have the following fields):
 - Contractor info: 11 columns (fields) as specified in "Data Requirements #1", above.
 - Labor info: 9 columns (fields) as specified in "Data Requirements #2", above.
 - Equipment info: 8 columns (fields) as specified in "Data Requirements #3", above.

For each type of file, columns (fields) must be in the order specified under "Data Requirements", above. All columns (fields) described under "Data Requirements" must be present for all rows, even if some column (field) values are empty. The first row of each file may contain column headers (in plain text) rather than data, if desired.

5. Column (field) contents must conform to the data type and length requirements described in the "Data Requirement" section, above. In addition, column (field) data must conform to the following restrictions:
 - Labor classification codes must conform to a list of standard codes that will be supplied by Caltrans.
 - DBE status codes must conform to a list of standard codes that will be supplied by Caltrans.
 - Ethnicity codes must conform to standard codes that will be supplied by Caltrans.
 - Data in the "trainee status" column must be either "Y" or "N".
 - Data in the "gender" column must be either "M" or "F".
 - Data in laborer last name, first name and middle initial fields shall be all uppercase. Any letters in the equipment number field shall likewise be uppercase.
 - Equipment owner's description may not be omitted. (The description, together with the equipment number, is how the equipment will be identified in the field.)
 - Equipment type, make, model, and ratebook code shall conform to the Department of Transportation Publication entitled "Labor Surcharge and Equipment Rental Rate", which is in effect on the date upon the work is performed. If the equipment in question does not have an entry in the book then alternate, descriptive entries may be made in these fields.
6. The name of each file must indicate its contents, e.g., "XYZlab.txt" for laborers from XYZ Company, Inc. Each floppy disk supplied to Caltrans must be accompanied by a printed list of the files it contains with a brief description of the contents of each file.

PAYMENT.-- Payment for providing electronic mobile daily diary computer system data delivery will be made on a lump sum basis. The lump sum bid price for electronic mobile daily diary computer system data delivery will be made according to the following schedule:

The Contractor will receive not more than 6.5 per cent per month of the total bid price for electronic mobile daily diary computer system data delivery.

After the completion of the work, 100 per cent payment will be made for electronic mobile daily diary computer system data delivery less the permanent deduction, if any, for failure to deliver complete weekly electronic mobile daily diary computer system data in each month.

The contract lump sum price paid for electronic mobile daily diary computer system data delivery shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in electronic mobile daily diary computer system data delivery as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

In the event the Contractor fails to deliver complete weekly electronic mobile daily diary computer system data in each month, the Department will retain 6.5 per cent of the total bid price for electronic mobile daily diary computer system data delivery until the data is delivered.

10-1.10 OBSTRUCTIONS

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include but are not limited to the following:

| Notification Center | Telephone Number |
|---|----------------------------------|
| Underground Service Alert-Northern California (USA) | 1-800-642-2444 1-800-227-2600 |
| Underground Service Alert-Southern California (USA) | 1-800-422-4133 1-800-227-2600 |

10-1.11 MOBILIZATION

Mobilization shall conform to the provisions in Section 11, "Mobilization," of the Standard Specifications.

10-1.12 CONSTRUCTION AREA SIGNS

Construction area signs shall be furnished, installed, maintained, and removed when no longer required in accordance with the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to commencing any excavation for construction area sign posts. The regional notification centers include but are not limited to the following:

| Notification Center | Telephone Number |
|---|----------------------------------|
| Underground Service Alert-Northern California (USA) | 1-800-642-2444 1-800-227-2600 |
| Underground Service Alert-Southern California (USA) | 1-800-422-4133 1-800-227-2600 |

All excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

Sign substrates for stationary mounted construction area signs may be fabricated from fiberglass reinforced plastic as specified under "Prequalified and Tested Signing and Delineation Materials" elsewhere in these special provisions.

Type IV reflective sheeting for sign panels for portable construction area signs shall conform to the requirements specified under "Prequalified and Tested Signing and Delineation Materials" elsewhere in these special provisions.

10-1.13 MAINTAINING TRAFFIC

Attention is directed to Sections 7-1.08, "Public Convenience," 7-1.09, "Public Safety," and 12, "Construction Area Traffic Control Devices," of the Standard Specifications and to the Section entitled "Public Safety" elsewhere in these special provisions, and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7-1.09.

The minimum size specified for Type II flashing arrow signs in the table following the second paragraph of Section 12-3.03, "Flashing Arrow Signs," of the Standard Specifications is amended to read "36 inches by 72 inches".

In the Standard Plans, Note 10 on Standard Plan T10, Note 9 on Standard Plan T10A, Note 5 on Standard Plan T11, Note 6 on Standard Plan T12, Note 5 on Standard Plan T13, and Note 4 on Standard Plan T14 are revised to read:

All traffic cones used for night lane closures shall have reflective cone sleeves as specified in the specifications.

The second and third paragraphs of Section 12-3.10, "Traffic Cones," of the Standard Specifications are amended to read:

During the hours of darkness traffic cones shall be affixed with reflective cone sleeves. The reflective sheeting of sleeves on the traffic cones shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20.

Reflective cone sleeves shall conform to the following:

1. Removable flexible reflective cone sleeves shall be fabricated from the reflective sheeting specified in the special provisions, have a minimum height of 13 inches and shall be placed a maximum of 3 inches from the top of the cone. The sleeves shall not be in place during daylight hours.
2. Permanently affixed semitransparent reflective cone sleeves shall be fabricated from the semitransparent reflective sheeting specified in the special provisions, have a minimum height of 13 inches, and shall be placed a maximum of 3 inches from the top of the cone. Traffic cones with semitransparent reflective cone sleeves may be used during daylight hours.
3. Permanently affixed double band reflective cone sleeves shall have 2 white reflective bands. The top band shall be 6 inches in height, placed a maximum of 4 inches from the top of the cone. The lower band shall be 4 inches in height, placed 2 inches below the bottom of the top band. Traffic cones with double band reflective cone sleeves may be used during daylight hours.

The type of reflective cone sleeve used shall be at the option of the Contractor. Only one type of reflective cone sleeve shall be used on the project.

The C16 and C17 designations of the signs shown on the detail "Entrance Ramp Without Turning Pockets" of Standard Plan T14 are amended to designate the signs as R16 and R17, respectively.

Lane closures shall conform to the provisions in the section of these special provisions entitled "Traffic Control System for Lane Closure."

On or before Monday Wednesday of each week, the Contractor shall furnish to the Engineer a schedule of all proposed lane and ramp closures for the following week. Any requests for changes to the weekly schedule shall be submitted to the Engineer for approval at least 24 hours prior to the proposed change.

All requests must indicate the closure date(s), time(s) of closure, county, route, direction, post mile, description of facility closed (lane, on/off-ramp, connector ramp, collector road, shoulder, median, bridge, etc.)

Approval or denial of lane closure requests will be determined by 10:00 A.M. on the Friday preceding the week of the requested work. Approval does not allow closures other than the date, time, and location indicated. For closures that are postponed due to weather or other unforeseen circumstances, previously approved requests may be submitted for consideration of rescheduling during the week and will be approved only after a case-by-case review by the Engineer.

Request for approval for unforeseen lane closures may be submitted at any time, but immediate review/approval cannot be guaranteed. Those conflicting with previously approved closures will be denied. For critical unforeseen lane closure requests that must be responded to immediately, the Engineer shall be immediately contacted for timely resolution.

If the Contractor's request for lane closure is denied and the Engineer determines that the Contractor is delayed in performing current controlling operation or operations of work, the Contractor will be granted an extension of time commensurate with the delay in accordance with the provisions of Section 8-1.07, "Liquidated Damages," of the Standard Specifications.

The Contractor will be compensated for the idle time of forces and equipment and any additional costs involved in rescheduling and moving of equipment in accordance with the provisions of Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Should the Contractor fail to provide all lanes ready for use by public traffic at the times specified in the "Lane Closure Charts" included in this section "Maintaining Traffic," on Route 80, liquidated damages will be assessed by the Department as follows:

For each 10 minute period, or fraction thereof, that all lanes are not available for use by public traffic as delineated on the charts, the amount of liquidated damage assessed will be \$7,700.

The maximum amount of such assessment will be \$139,000 per day.

The Department will permanently reduce the amount of any contract moneys due to the Contractor, or that may become due, by the amount of such damages.

It is expressly agreed by the parties that the specific degree of damage suffered by the traveling public is uncertain and cannot be readily ascertained with a high degree of accuracy and that, therefore, liquidated damages are appropriately established at the time of entering into the contract.

Personal vehicles of the Contractor's employees shall not be parked within the right of way except at the Bay Bridge Toll Plaza park and ride areas. The Contractor shall notify local authorities of his intent to begin work at least 5 days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make his own arrangements relative to keeping the working area clear of parked vehicles.

Whenever vehicles or equipment are parked on the shoulder within 6 feet of a traffic lane, the shoulder area shall be closed as shown on the plans.

Lanes shall be closed only during the hours shown on the charts included in this section "Maintaining Traffic." Except work required under said Sections 7-1.08 and 7-1.09, work that interferes with public traffic shall be performed only during the hours shown for lane closures.

Designated legal holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When November 11th falls on a Saturday, the preceding Friday shall be a designated legal holiday.

Minor deviations from the requirements of this section concerning hours of work which do not significantly change the cost of the work may be permitted upon the written request of the Contractor if in the opinion of the Engineer public traffic will be better served and the work expedited. Such deviations shall not be adopted until the Engineer has indicated his written approval. All other modifications will be made by contract change order.

LANE CLOSURE CHART NO. 1

| DIRECTION: Eastbound | | LOCATION: On I-80 - West of the San Francisco - Oakland Bay Bridge Toll Plaza | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|--|
| Lane Requirements and Hours of Work | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Midnight | 1:00 PM | 10:00 PM | 9:00 PM | 8:00 PM | 7:00 PM | 6:00 PM | 5:00 PM | 4:00 PM | 3:00 PM | 2:00 PM | 1:00 PM | Noon | 11:00 AM | 10:00 AM | 9:00 AM | 8:00 AM | 7:00 AM | 6:00 AM | 5:00 AM | 4:00 AM | 3:00 AM | 2:00 AM | 1:00 AM | Midnight | |
| Mondays through Thursdays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fridays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Saturdays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sundays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Days Before Designated Legal Holidays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Designated Legal Holidays | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Legend:

- Provide at least two adjacent traffic lanes.
- Provide at least three adjacent traffic lanes.
- Provide at least four adjacent traffic lanes.
- Provide at least four adjacent lanes of traffic.
(see remarks)
- No lane closure permitted.

REMARKS:

Weekday daytime lane closure subject to the following:
1) May not be installed between 0700 and 0900 (if the closure is not already in place by 0700, installation of closure CAN NOT begin until after 0900).

LANE CLOSURE CHART NO. 2

| DIRECTION: Westbound | | LOCATION: On I-80 - West of the San Francisco - Oakland Bay Bridge Toll Plaza | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|--|
| Lane Requirements and Hours of Work | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Midnight | 11:00 PM | 10:00 PM | 9:00 PM | 8:00 PM | 7:00 PM | 6:00 PM | 5:00 PM | 4:00 PM | 3:00 PM | 2:00 PM | 1:00 PM | Noon | 11:00 AM | 10:00 AM | 9:00 AM | 8:00 AM | 7:00 AM | 6:00 AM | 5:00 AM | 4:00 AM | 3:00 AM | 2:00 AM | 1:00 AM | Midnight | |
| Mondays through Thursdays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fridays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Saturdays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sundays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Days Before Designated Legal Holidays | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Designated Legal Holidays | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Legend:

- Provide at least one traffic lane.
- Provide at least two adjacent traffic lanes.
- Provide at least three adjacent traffic lanes.
- Provide at least four adjacent traffic lanes.
- No lane closure permitted.

REMARKS:

10-1.14 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

A traffic control system shall consist of closing traffic lanes in accordance with the details shown on the plans, the provisions of Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, the provisions under "Maintaining Traffic" and "Construction Area Signs" elsewhere in these special provisions and these special provisions.

The provisions in this section will not relieve the Contractor from the responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

During traffic stripe operations and pavement marker placement operations using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving type lane closures. During all other operations traffic shall be controlled with stationary type lane closures. The Contractor's attention is directed to the provisions in Section 84-1.04, "Protection From Damage," and Section 85-1.06, "Placement," of the Standard Specifications.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the component to its original condition or replace the component and shall restore the component to its original location.

STATIONARY TYPE LANE CLOSURE.--When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, approved by the Engineer, within the limits of the highway right of way.

Each vehicle used to place, maintain and remove components of a traffic control system on multilane highways shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with Type II flashing arrow sign not involved in placing, maintaining, or removing the components when operated within a stationary type lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. The flashing arrow sign shown on the plans shall not be used on the vehicles which are doing the placing, maintaining and removing of components of a traffic control system, and shall be in place before a lane closure requiring its use is completed.

MOVING TYPE LANE CLOSURE.--Flashing arrow signs used in moving lane closures shall be truck-mounted. Changeable message signs used in moving lane closure operations shall conform to Section 12-3.12, "Portable Changeable Message Signs," of the Standard Specifications, except the signs shall be truck-mounted and the full operation height of the bottom of the sign may be less than 7 feet above the ground, but should be as high as practicable.

Truck-mounted crash cushions (TMCC) for use in moving lane closures shall be any of the following approved models, or equal:

(1)

Hexfoam TMA Series 3000 and Alpha 1000 TMA Series 1000 and Alpha 2001 TMA Series 2001

| Manufacturer: | Distributor(Northern): | Distributor(Southern): |
|--|--|--|
| Energy Absorption Systems, Inc. One East Wacker Drive Chicago, IL 60601-2076 Telephone (312) 467-6750 | Traffic Control Service, Inc. 8585 Thys Court Sacramento, CA 95828 Telephone (800) 884-8274 FAX (916) 387-9734 | Traffic Control Service, Inc. 1881 Betmor Lane Anaheim, CA 92805 Telephone (800) 222-8274 |

(2)

Cal T-001 Model 2 or Model 3

| Manufacturer: | Distributor |
|--|---|
| Hexcel Corporation 11711 Dublin Blvd P.O. Box 2312 Dublin, CA 94568 Telephone (510) 828-4200 | Hexcel Corporation 11711 Dublin Blvd. P.O. Box 2312 Dublin, CA 94568 Telephone (510) 828-4200 |

(3)

Renco Rengard Model Nos. CAM 8-815 and RAM 8-815

Manufacturer:

Renco Inc.
1582 Pflugerville Loop Road
P.O. Box 730
Pflugerville, TX 78660-0730
Telephone (800) 654-8182

Distributor

Renco Inc.
1582 Pflugerville Loop Road
P.O. Box 730
Pflugerville, TX 78660-0730
Telephone (800) 654-8182

Each TMCC shall be individually identified with the manufacturer's name, address, TMCC model number, and a specific serial number. The names and numbers shall each be a minimum 1/2 inch high, and located on the left (street) side at the lower front corner. The TMCC shall have a message next to the name and model number in 1/2 inch high letters which states, "The bottom of this TMCC shall be _____ inches \pm _____ inches above the ground at all points for proper impact performance." Any TMCC which is damaged or appears to be in poor condition shall not be used unless recertified by the manufacturer. The Engineer shall be the sole judge as to whether used TMCCs supplied under this contract need recertification. Each unit shall be certified by the manufacturer to meet the requirements for TMCCs in accordance with the standards established by the Transportation Laboratory Structures Research Section.

Approvals for new TMCC designs proposed as equal to the above approved models shall be in accordance with the procedures (including crash testing) established by the Transportation Laboratory Structures Research Section. For information regarding submittal of new designs for evaluation contact:

Transportation Laboratory
Structures Research Section
P.O. Box 19128
5900 Folsom Boulevard
Sacramento, CA 95819

New TMCCs proposed as equal to approved TMCCs or approved TMCCs determined by the Engineer to need recertification shall not be used until approved or recertified by the Transportation Laboratory Structures Research Section.

PAYMENT.--The contract lump sum price paid for traffic control system shall include full compensation for furnishing all labor, materials (including signs), tools, equipment and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of the traffic control system as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications, shall not apply to the item of traffic control system. Adjustments in compensation for traffic control system will be made only for increased or decreased traffic control system required by changes ordered by the Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.03, "Force Account Payment," of the Standard Specifications for increased work, and estimated on the same basis in the case of decreased work.

Traffic control system required by work which is classed as extra work, as provided in Section 4-1.03D of the Standard Specifications, will be paid for as a part of the extra work.

10-1.15 TEMPORARY RAILING

Temporary railing (Type K) shall be placed at the locations shown on the plans, specified in these special provisions or in the Standard Specifications or ordered by the Engineer, and shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Temporary railing (Type K) fabricated prior to January 1, 1993, with one longitudinal No. 5 reinforcing steel bar near the top in lieu of the 2 longitudinal No. 5 reinforcing steel bars near the top, as shown on the plans, may be used.

The Contractor's attention is directed to the provisions in "Public Safety" elsewhere in these special provisions.

Temporary railing (Type K) placed in accordance with the provisions in "Public Safety" elsewhere in these special provisions will not be measured nor paid for.

Reflectors for temporary railing (Type K) shall be furnished by the Contractor. Reflectors shall be, at the option of the Contractor, one of the non-impactable concrete delineators listed in "Prequalified and Tested Signing and Delineation

Materials" elsewhere in these special provisions. Adhesive for mounting reflectors shall be per manufacturers recommendations and as approved by the Engineer.

Full compensation for reflectors and adhesive shall be considered as included in the contract price paid per linear foot for temporary railing (Type K) and no separate payment will be made therefor.

10-1.16 CHANNELIZERS

Channelizers shall be surface mounted type and shall be furnished, placed and maintained at the locations shown on the plans and shall conform to the provisions in Sections 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Channelizers shall conform to the provisions in "Prequalified and Tested Signing and Delineation Materials," elsewhere in these special provisions.

Channelizer posts shall be orange in color.

At the option of the Contractor, channelizer bases may be cemented to the pavement using hot melt bitumen adhesive and in the same manner provided for cementing pavement markers to pavement in the section of these special provisions entitled "Pavement Markers."

10-1.17 TEMPORARY CRASH CUSHION MODULE

This work shall consist of furnishing, installing and maintaining sand filled temporary crash cushion modules in groupings or arrays at each location shown on the plans, specified in the special provisions or directed by the Engineer. The grouping or array of sand filled modules shall form a complete sand filled temporary crash cushion in accordance with the details shown on the plans and these special provisions.

Attention is directed to "Public Safety" of these special provisions.

GENERAL.--Whenever the work or the Contractor's operations establishes a fixed obstacle, the exposed fixed obstacle shall be protected with a sand filled temporary crash cushion. The sand filled temporary crash cushion shall be in place prior to opening the lanes adjacent to the fixed obstacle to public traffic.

Sand filled temporary crash cushions shall be maintained in place at each location, including times when work is not actively in progress. Sand filled temporary crash cushions may be removed during a work period for access to the work provided that the exposed fixed obstacle is 15 feet or more from a lane carrying public traffic and the temporary crash cushion is reset to protect the obstacle prior to the end of the work period in which the fixed obstacle was exposed. When no longer required, as determined by the Engineer, sand filled temporary crash cushions shall be removed from the site of the work.

MATERIALS.--At the Contractor's option, the modules for use in sand filled temporary crash cushions shall be either of the following types or equal:

Energite Inertial Modules

Manufacturer:

Energy Absorption Systems, Inc.
One East Wacker Drive
Chicago, IL 60601-2076
Telephone (312) 467-6750

Distributor(Northern):

Traffic Control Service, Inc.
8585 Thys Court
Sacramento, CA 95828
Telephone (800) 884-8274
FAX (916) 387-9734

Distributor(Southern):

Traffic Control Service, Inc.
1881 Betmor Lane
Anaheim, CA 92805
Telephone (800) 222-8274

or Fitch Inertial Modules

National Distributor:

Roadway Safety Service, Inc.
700-3 Union Parkway
Ronkonkoma, NY 11779

Distributor

Singletree Sales Company
1533 Berger Drive
San Jose, CA 95112
Telephone (800) 822-7735

Modules contained in each temporary crash cushion shall be of the same type at each location. The color of the modules shall be the standard yellow color as furnished by the vendor, with black lids. The modules shall exhibit good workmanship free from structural flaws and objectionable surface defects. The modules need not be new. Good used undamaged modules conforming to color and quality of the types specified above may be utilized. If used Fitch modules

requiring a seal are furnished, the top edge of the seal shall be securely fastened to the wall of the module by a continuous strip of heavy duty tape.

Modules shall be filled with sand in accordance with the manufacturer's directions, and to the sand capacity in pounds for each module as shown on the plans. Sand for filling the modules shall be clean washed concrete sand of commercial quality. At the time of placing in the modules, the sand shall contain not more than 7 percent water, as determined by California Test 226.

Modules damaged due to the Contractor's operations shall be repaired immediately by the Contractor at his expense. Modules damaged beyond repair, as determined by the Engineer, due to the Contractor's operations shall be removed and replaced by the Contractor at his expense.

INSTALLATION.--Temporary crash cushion modules shall be placed on movable pallets or frames conforming to the dimensions shown on the plans. The pallets or frames shall provide a full bearing base beneath the modules. The modules and supporting pallets or frames shall not be moved by sliding or skidding along the pavement or bridge deck.

A Type R or P marker panel shall be attached to the front of the crash cushion as shown on the plans, when the closest point of crash cushion array is within 12 feet of the traveled way. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods approved by the Engineer.

At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of the Contractor and shall be removed from the site of the work. Temporary crash cushion modules shall not be installed in permanent work.

MEASUREMENT AND PAYMENT.--Temporary crash cushion modules will be measured by the unit determined from the actual count of modules used in the work or ordered by the Engineer at each location. Temporary crash cushion modules placed in accordance with the provisions in "Public Safety" elsewhere in these special provisions and modules placed in excess of the number specified or shown will not be measured nor paid for.

Repairing modules damaged by public traffic will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. Modules damaged beyond repair by public traffic, when ordered by the Engineer, shall be removed and replaced immediately by the Contractor. Modules replaced due to damage by public traffic will be measured and paid for as temporary crash cushion module.

If the Engineer orders a lateral move of sand filled temporary crash cushions and the repositioning is not shown on the plans, moving the sand filled temporary crash cushion will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications and such temporary crash cushion modules will not be counted for payment in the new position.

The contract unit price paid for temporary crash cushion module shall include full compensation for furnishing all labor, materials (including sand, pallets or frames and marker panels), tools, equipment and incidentals, and for doing all work involved in furnishing, installing, maintaining, moving and resetting during a work period for access to the work, and removing from the site of the work when no longer required (including those damaged by public traffic) the sand filled temporary crash cushion modules, complete in place, as shown on the plans, as specified in these special provisions and as directed by the Engineer.

10-1.18 EXISTING HIGHWAY FACILITIES

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

Plans of the existing bridge are available at the District 04 Office, 111 Grand Avenue, Oakland, California, Telephone (510) 286-5549.

Plans of existing bridges available to the Contractor are reproductions of the original contract plans with significant changes noted and working drawings and do not necessarily show normal construction tolerances and variances. Where dimensions of new construction required by this contract are dependent on the dimensions of existing bridges, the Contractor shall verify the controlling field dimensions and shall be responsible for adjusting dimensions of the work to fit existing conditions.

Attention is directed to Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications. Work practices and worker health and safety shall conform to the Cal/OSHA Safety Orders Title 8, of the California Code of Regulations including Section 5158, "Other Confined Space Operations."

The existing paint systems on Bridge Number 33-0025 consist of red lead, chlorinated rubber and zinc undercoats and phenolic aluminum and water based finish coats. Any work that disturbs the existing paint system will expose workers to health hazards and will (1) produce debris containing heavy metal in amounts that exceed the thresholds established in Titles 8 and 22 of the California Code of Regulations or (2) produce toxic fumes when heated. All debris produced when the existing paint system is disturbed shall be contained.

DEBRIS CONTAINMENT AND COLLECTION PROGRAM.--Prior to starting work, the Contractor shall submit to the Engineer a debris containment and collection program for debris produced when the existing paint system is disturbed in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The program shall identify materials, equipment and methods to be used when the existing paint system is disturbed and shall include working drawings of any containment system, loads applied to the bridge by any containment structure, and provisions for ventilation and air movement for visibility and worker safety.

If the measures being taken by the Contractor are inadequate to provide for the containment and collection of debris produced when the existing paint system is disturbed, the Engineer will direct the Contractor to revise the operations and the debris containment and collection program. The directions will be in writing and will specify the items of work for which the Contractor's debris containment and collection program are inadequate. No further work shall be performed on the items until the debris containment and collection programs are adequate and, if required, a revised program has been approved for the containment and collection of debris produced when the existing paint system is disturbed.

The Engineer will notify the Contractor of the approval or rejection of any submitted or revised debris containment and collection program within 2 weeks of submittal of the Contractor's program or revised program.

The State will not be liable to the Contractor for failure to approve all or any portion of an originally submitted or revised debris containment and collection program, nor for any delays to the work due to the Contractor's failure to submit acceptable programs.

SAFETY AND HEALTH PROVISIONS.--Attention is directed to Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications. Work practices and worker health and safety shall conform to the Construction Safety Orders Title 8, of the California Code of Regulations including Section 1532.1, "Lead."

The Contractor shall furnish to the Engineer a written Code of Safe Practices, and have an Injury and Illness Prevention Program, and a Hazard Communication Program in accordance with the provisions of Construction Safety Orders 1509 and 1510.

Prior to starting work that disturbs the existing paint system and at such times when revisions to the program are required by Section 1532.1, "Lead," the Contractor shall submit the compliance programs required in subsection (e)(2), "Compliance Program," of Section 1532.1, "Lead," of the Construction Safety Orders to the Engineer in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The compliance programs shall include the data specified in subsections (e)(2)(B) and (e)(2)(C) of Section 1532.1, "Lead." Approval of the compliance programs by the Engineer will not be required. The compliance programs shall be reviewed and signed by a Certified Industrial Hygienist (CIH) who is certified in comprehensive practice by the American Board of Industrial Hygiene (ABIH). Copies of all air monitoring or jobsite inspection reports made by or under the direction of the CIH in accordance with Section 1532.1, "Lead," shall be furnished to the Engineer within 10 days after date of monitoring or inspection.

DEBRIS HANDLING.--Temporary storage on the ground of the debris produced when the existing paint system is disturbed will not be permitted. Debris accumulated inside the containment system shall be removed before the end of each work shift. Debris shall be stored in approved leak proof containers and shall be handled in such a manner that no spillage will occur.

Disposal of debris produced when the existing paint system is disturbed shall be performed in accordance with all applicable Federal, State and Local hazardous waste laws. Laws that govern this work include:

1. Health and Safety Code, Division 20, Chapter 6.5 (California Hazardous Waste Control Act).
2. Title 22; California Code of Regulations, Chapter 30 (Minimum Standard for Management of Hazardous and Extremely Hazardous Materials).
3. Title 8, California Code of Regulations.

Except as otherwise provided below, debris produced when the existing paint system is disturbed shall be disposed of by the Contractor at an approved Class 1 disposal facility in accordance with the requirements of the disposal facility operator. The debris shall be hauled by a transporter currently registered with the California Department of Toxic Substances Control using correct manifesting procedures and vehicles displaying current certification of compliance. The Contractor shall make all arrangements with the operator of the disposal facility and perform any testing of the debris required by the operator.

At the option of the Contractor, the debris produced when the existing paint system is disturbed shall be disposed of by the Contractor at a facility equipped to recycle the debris, subject to the following requirements:

Copper slag abrasive blended by the supplier with a calcium silicate compound shall be used for blast cleaning.

The debris produced when the existing paint system is disturbed shall be tested by the Contractor to confirm that the solubility of the heavy metals is below regulatory limits and that the debris may be transported to the recycling facility as a non-hazardous waste.

The Contractor shall make all arrangements with the operator of the recycling facility and perform any testing of the debris produced when the existing paint system is disturbed that is required by the operator.

WORK AREA MONITORING.--The Contractor shall perform work area monitoring of the ambient air and soil in and around the work area at the bridge site to verify the effectiveness of the containment system. The work area monitoring shall consist of collecting, analyzing and reporting of air and soil test results, and recommending any required corrective action when specified exposure levels are exceeded. The work area monitoring shall be carried out under the direction of a CIH. The samples shall be collected at locations designated by the Engineer.

Air samples shall be collected and analyzed in accordance with National Institute for Occupational Safety and Health (NIOSH) methods. Lead air samples shall be collected and analyzed in accordance with NIOSH Method 7082, with a limit of detection of at least $0.5 \mu\text{g}/\text{m}^3$. Air samples for other metals shall be collected and analyzed in accordance with NIOSH Method 7300, with a limit of detection of at least one percent of the appropriate Permissible Exposure Limits (PELs) of California/Occupational Safety and Health Administration (Cal/OSHA). Alternative methods of sample collection and analysis, with equivalent limits of detection, may be used at the option of the Contractor.

The airborne metals exposure, outside either the containment system or work areas, shall not exceed the lower of either: (1) 10 percent of the Action Level specified for lead by Section 1532.1, "Lead," or (2) 10 percent of the appropriate PELs specified for other metals by Cal/OSHA.

The air samples shall be collected at least once per week during progress of work that disturbs the existing paint system. All air samples shall be analyzed within 48 hours at a facility accredited by the Environmental Lead Laboratory Accreditation Program of the American Industrial Hygiene Association (AIHA). When corrective action is recommended by the CIH, additional samples may be required by the Engineer to be taken, at the Contractor's expense.

Ten soil samples shall be collected prior to start of work, and 10 soil samples shall be collected within 36 hours following completion of cleaning operations of existing structural steel. Where the cleaning operations extend over large areas of soil or many separate areas of soil at each bridge site, the samples shall be collected at various times during the contract, as determined by the Engineer. A soil sample shall consist of 5 plugs, each 3/4 inch diameter and 1/2 inch deep, taken at each corner and center of a one foot square area. Soil samples shall be analyzed for total lead and zinc in accordance with Method 3050 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846 published by the United States Environmental Protection Agency.

There shall be no increase in the concentrations of heavy metal in the soil in the area affected when the existing paint system is disturbed. When soil sampling, after completion of work that disturbs the existing paint system, shows an increase in the concentrations of heavy metal, the area affected shall be cleaned and resampled at the Contractor's expense until soil sampling and testing shows concentrations of heavy metal less than or equal to the concentrations collected prior to start of work.

In areas where there is no exposed soil, there shall be no visible increase in the concentrations of heavy metal on the area affected when the existing paint system is disturbed. Any visible increase in the concentrations of heavy metal, after completion of work that disturbs the existing paint system, shall be removed at the Contractor's expense.

Air and soil sample laboratory analysis results, including results of additional samples taken after corrective action as recommended by the CIH, shall be submitted to the Engineer. The results shall be submitted both verbally within 48 hours after sampling and in writing with a copy to the Contractor, within 5 days after sampling. Sample analysis reports shall be prepared by the CIH as follows:

For both air and soil sample laboratory analysis results, the date and location of sample collection, sample number, contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Post mile will be required.

For air sample laboratory analysis results, the following will be required:

1. List of emission control measures in place when air samples were taken.
2. Air sample results shall be compared to the appropriate PELs.
3. Chain of custody forms.
4. Corrective action recommended by the CIH to ensure airborne metals exposure, outside either the containment system or work areas, is within specified limits.

For soil sample laboratory analysis results, the concentrations of heavy metal expressed as parts per million will be required.

CONTAINMENT SYSTEM.--The containment system shall consist of, at the option of the Contractor, (1) a ventilated containment structure, or (2) vacuum shrouded surface preparation equipment and drapes, tarps or other materials, or (3) equivalent containment system. The containment system shall contain all water, resulting debris, and visible dust produced when the existing paint system is disturbed.

The containment system shall provide the clearances specified under "Maintaining Traffic" of these special provisions, except that when no clearances are specified a vertical clearance of 15 feet and a horizontal clearance of 32 feet shall be provided for the passage of public traffic.

Falsework or supports for the ventilated containment structure shall not extend below the vertical clearance level nor to the ground line at any location within the roadbed.

The ventilated containment structure shall conform to the provisions for falsework in Section 51-1.06, "Falsework," of the Standard Specifications.

The minimum total design load of the ventilated containment structure shall consist of the sum of the dead and live vertical loads. Dead load shall consist of the actual weight of the ventilated containment structure. Live loads shall consist of a uniform load of not less than 45 pounds per square foot, which includes 20 pounds per square foot of sand load, applied over the area supported, and in addition, a moving 1000 pound concentrated load shall be applied to produce maximum stress in the main supporting elements. Assumed horizontal loads need not be included in the design of the ventilated containment structure.

The ventilated containment structure may be supported with either rigid or flexible supports. The rigid or flexible containment materials on the containment structure shall retain air borne particles but may allow air flow through the containment materials. Flexible materials shall be supported and fastened to prevent escape of abrasive and blast materials due to whipping from traffic or wind and to maintain the clearances.

All mating joints between the ventilated containment structure and the bridge shall be sealed. Sealing may be by overlapping of seams when using flexible materials or by using tape, caulking, or other sealing measures.

Multiple flap overlapping door tarps shall be used at entry ways to the ventilated containment structure to prevent dust or debris from escaping.

Baffles, louvers, flapper seals or ducts shall be used at make-up air entry points to the ventilated containment structure to prevent escape of abrasives and resulting surface preparation debris.

The ventilated containment structure shall be properly maintained while work is in progress and shall not be changed from the approved working drawings without prior approval of the Engineer.

The ventilation system in the ventilated containment structure shall be of the forced input air flow type with fans or blowers.

Negative air pressure shall be employed within the ventilated containment structure and will be verified by visual methods by observing the concave nature of the containment materials while taking into account wind effects, or by using smoke or other visible means to observe air flow. The input air flow shall be properly balanced with the exhaust capacity throughout the range of operations.

The exhaust air flow of the ventilation system in the ventilated containment structure shall be forced into dust collectors (wet or dry) or bag houses.

PROTECTIVE WORK CLOTHING AND HYGIENE FACILITIES.--Wherever there is exposure or possible exposure to heavy metals or silica dust at the bridge site, the Contractor shall, for not more than 3 State personnel: (1) furnish, clean and replace protective work clothing and (2) provide access to hygiene facilities. The furnishing, cleaning and replacement of protective work clothing, and hygiene facilities shall conform to the provisions of subsections (g), "Protective work clothing and equipment," and (i), "Hygiene facilities and practices," of Section 1532.1, "Lead," of the Construction Safety Orders.

The protective work clothing and access to hygiene facilities shall be provided during exposure or possible exposure to heavy metals or silica dust at the bridge site and application of the undercoats of paint.

Protective work clothing and hygiene facilities shall be inspected and approved by the Engineer before being used by State personnel.

The protective work clothing shall remain the property of the Contractor at the completion of the contract.

PAYMENT.--Full compensation for the containment system, protective work clothing and access to hygiene facilities for State personnel; and handling of debris produced when the existing paint system is disturbed, including testing, hauling, treatment, disposal fees and local taxes, shall be considered as included in the contract price paid for the item of work requiring the disposal of the debris produced when the existing paint system is disturbed and no additional compensation will be allowed therefor.

Work area monitoring will be paid for on the basis of a lump sum price.

The contract lump sum price paid for work area monitoring shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in collecting and analyzing of samples of ambient air and soil for heavy metals, complete in place, including reporting the test results, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.18A BRIDGE REMOVAL

Removing portions of bridge shall conform to the requirements in Section 15-4, "Bridge Removal," of the Standard Specifications and these special provisions.

SAN FRANCISCO-OAKLAND BAY BRIDGE (Bridge No. 33-0025)

Remove portions of existing concrete and structural steel components including grinding of existing rivets and reaming rivet holes, as shown on the plans. Removal work is divided into the following segments:

LOCATION A
Yerba Buena Island Viaduct

LOCATION B
Pier YB-1 to Pier E-1

LOCATION C
Pier E-1 to Pier E-4

LOCATION D
Pier E-4 to Pier E-9

LOCATION E
Pier E-9 to Pier E-17

LOCATION F
Pier E-17 to Pier E-23

Surfaces of holes remaining after rivet removal shall be cleaned and painted as specified for existing steel surfaces in "Clean and Paint Structural Steel" elsewhere in these special provisions.

Rivet removal shall conform to the following:

Two weeks before rivet removal work begins, the Contractor shall submit to the Engineer working drawings with the proposed method and equipment to be used for rivet removal in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Rivet removal will not be permitted until the removal method has been approved by the Engineer. In the event that the Engineer determines that rivet removal work is resulting in damaged holes, the Contractor shall revise and resubmit a new proposed method for rivet removal.

Rivets to be removed shall have their head chipped off and the shank driven, drilled, or cored out. Care shall be taken not to enlarge rivet holes or to damage remaining material. Burning will not be permitted without prior approval by the Engineer. The Contractor shall demonstrate removal methods using heat to the Engineer. Heat resulting from any removal method shall not damage rivet holes or the surrounding materials.

Where existing rivets are removed, and the resulting holes require enlargement, the holes shall be enlarged by not more than one-sixteenth inch (1/16-inch) in diameter greater than the nominal bolt diameter shown on the plans. Holes shall be enlarged by reaming. Enlarging rivet holes by not more than one-sixteenth inch (1/16-inch) in diameter greater than the nominal bolt diameter shown on the plans shall be considered as work included in Bridge Removal (Portion).

At locations where surrounding material has been damaged as a result of the Contractor's operations, and reaming of more than one-sixteenth inch (1/16-inch) in diameter is required, and the installation of an oversized bolt is required, the surrounding material shall be repaired, and reaming and the installation of an oversized bolt, shall be at the Contractor's expense.

At locations where rivet holes contain cracked, torn, or otherwise damaged material, the Contractor shall ream the hole and install an oversized bolt into the reamed hole. Reaming of more than one-sixteenth inch (1/16-inch) in diameter and installation of oversized bolts, shall be done as directed by the Engineer and will be paid for as extra work as provided in Section 4-1.03 D of the Standard Specifications.

All removed materials that are not to be salvaged or used in the reconstruction shall become the property of the Contractor and shall be disposed of outside the highway right of way in accordance with the provisions in Section 7-1.13 of the Standard Specifications.

Full compensation for removing and replacing batten as shown on the plans, shall be considered as included in the contract lump sum price paid for Bridge Removal (Portion) and no additional compensation will be allowed therefor.

Removal of water and silt material at Pier E23, if any, shall be done as directed by the Engineer and will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

Where portions of existing barrier rail is to be removed and modified as shown on the plans to accommodate retrofit work, the barrier rail shall be reattached according to the details shown on the plans prior to opening the adjacent traffic lane to public traffic. Should permanent barrier connection not be possible before opening the adjacent traffic lane to public traffic, a temporary barrier rail connection equivalent in strength to the original barrier connection shall be constructed. Two weeks before barrier removal work begins, the Contractor shall submit to the Engineer for approval, details of temporary rail connection including the method, materials and equipment to be used for the temporary reattachment of the existing barrier rail as specified herein. Full compensation for conforming to the requirements specified herein shall be considered as included in the various contract items of work involved and no additional compensation will be allowed therefor.

10-1.18B TEMPORARY PROTECTIVE COVER

The following requirements apply to the retrofit work of bridges whenever the retrofit work is to be performed over or within a horizontal distance of 10 feet from public traffic:

A protective cover supported by members of the existing structure shall be constructed before beginning bridge retrofit work.

The construction and removal of the protective cover shall conform to the requirements under "Order of Work" and "Maintaining Traffic" of these special provisions.

The Contractor shall be responsible for designing and constructing a safe and adequate protective cover, including attachment to the existing structure all with sufficient strength to support the entire load to be imposed. The protective cover shall be of sufficient strength to prevent any material, equipment or debris from falling onto public traffic.

Two weeks before work that requires a protective cover begins, the Contractor shall submit to the Engineer for approval, details of the temporary cover including dead and live load values assumed for designing the protective cover and the method, materials and equipment to be used for the attachment of the protective cover to the existing structure.

The protective cover shall extend at least 6 feet beyond the outside edge of the retrofit work and shall be placed in such a manner as to prevent any vertical or lateral drop of any material, equipment or debris.

Before removal, the protective cover shall be cleaned of all debris and fine material.

The protective cover shall provide the openings specified under "Maintaining Traffic" of these special provisions, except that when no openings are specified a vertical opening of 15 feet shall be provided for the passage of public traffic.

Supports for protective cover shall not extend below the vertical clearance level nor to the ground line at any location within the roadbed.

The construction of the protective cover as herein specified shall in no way be construed to relieve the Contractor of his responsibility as specified in Section 7-1.12, "Responsibility for Damage," of the Standard Specifications.

Full compensation for conforming to the requirements for temporary protective cover as specified herein shall be considered as included in the various contract items of work involved and no additional compensation will be allowed therefor.

10-1.18C RELOCATE MISCELLANEOUS FACILITIES

This work consists of removing, reinstalling and where necessary reconstructing existing miscellaneous facilities that interfere with the retrofit work as shown on the structure plans. Where necessary, miscellaneous facilities shall be temporarily supported during the retrofit work until they are reinstalled.

The types of existing miscellaneous facilities to be relocated shall consist of, but not be limited to, the following:

- 12" diameter water pipe
- 6" diameter drainage pipe
- Work platforms, platform railing and pipe hangers
- Barrier
- Ladder

Skid girder
Utility outlet stations
Utility cabinet

Unless otherwise shown on the plans, miscellaneous facilities connections shall be at least equal in strength to the existing connections as approved by the Engineer. New steel components for new connections shall conform to the requirements in "Steel Structures" elsewhere in these special provisions. New steel components for concrete connections shall conform to the requirements in Section 75, "Miscellaneous Metal," of the Standard Specifications.

Miscellaneous facilities shall be protected from damage during relocation. Facilities damaged due to the Contractor's operations shall be repaired to original condition as approved by the Engineer at the Contractor's expense.

For each type of facility to be relocated, two weeks before facility relocation work begins, the Contractor shall submit to the Engineer for approval a facility relocation plan showing details, materials, method and equipment to be used for the relocation of each facility, including details of temporary support and reconstruction of the facility including all new metal components and attachment hardware as necessary for connection to the retrofitted structure. The facility relocation plan submittal shall be in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Facility relocation work shall not begin until the Contractor's facility relocation plan has been approved by the Engineer.

Unless payment is otherwise provided, relocate miscellaneous facilities will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

10-1.18D REMOVE PAVEMENT MARKERS

Existing pavement markers, when no longer required for traffic lane delineation as directed by the Engineer, shall be removed and disposed of.

10-1.18E REMOVE TRAFFIC STRIPES

Traffic stripes to be removed will be designated by the Engineer.

Where blast cleaning is used for the removal of painted traffic stripes or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.

Nothing in these special provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety," of the Standard Specifications.

10-1.18F REMOVE THERMOPLASTIC TRAFFIC STRIPES

Thermoplastic traffic stripes to be removed will be designated by the Engineer.

Nothing in these special provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety," of the Standard Specifications.

10-1.18G RECONSTRUCT CHAIN LINK FENCE

Existing chain link fence shall be removed and reconstructed as shown on the plans.

Fence removed in excess of that required for reconstructing chain link fence shall be disposed of. Full compensation for removing and disposing of excess fence shall be considered as included in the contract price paid per linear foot for reconstruct chain link fence and no separate payment will be made therefor.

10-1.18H REMOVE CONCRETE

Concrete curb and sidewalk, designated on the plans to be removed, shall be removed.

The pay quantities of concrete to be removed will be measured by the cubic yard, measured before and during removal operations.

Concrete removed shall be disposed of outside the highway right of way in accordance with the provisions in Section 7-1.13 of the Standard Specifications.

Where no joint exists between concrete to be removed and concrete to remain in place, the concrete shall be cut in a neat line to a minimum depth of 0.17-foot with a power driven saw before concrete is removed.

10-1.19 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Surplus excavated material shall become the property of the Contractor and shall be disposed of outside the highway right of way in accordance with the provisions in Section 7-1.13 of the Standard Specifications.

10-1.19A CONTAMINATED AND HAZARDOUS MATERIAL EXCAVATION

All contaminated and hazardous material to be excavated as shown on the plans and described in these special provisions shall be transported to a disposal facility permitted to accept such material.

Attention is directed to "Contaminated and Hazardous Material, General" elsewhere in these special provisions.

Attention is directed to the following table that summarizes the vertical extent, degree and type of constituents of concern in the areas to be excavated.

YBI Matrix

Bent 52

| Zone (b.g.s) | Sample Depth (b.g.s.) | Sample I.D. | CAM 17 (mg/Kg) | WET (mg/L) | TCLP (mg/L) | TRPH (mg/Kg) | TPH-mo (mg/Kg) | Classification |
|--------------|-----------------------|--------------------------|----------------------|---------------|----------------|--------------|----------------|----------------|
| 0 to 3 feet | 0.5 foot | YB-1 (2) YB-3 YB-4 | Pb 109 * Pb 60 | 7 11 | 0.59 NA | 28 590 | 1600 Composite | Hazardous |
| | 1 foot | YB-3 YB-4 | * | | | 45 23 | | |
| | 2 feet | YB-1 (2) YB-3 YB-4 | Pb 66 * Pb 123 | 4.6 NA | | 74 1100 | | |
| 3 to 8+ feet | 3 feet | YB-1 (2) YB-3 YB-4 | Pb 6.4 * Cr 59 | 0.14 | | 19 15 | | Contaminated |
| | 5 feet | YB-3 YB-4 | * Pb 102 | 0.069 | | 11 710 | | |
| | 7 feet | YB-4 | * | | | 5.2 | | |
| | 8 feet | YB-3 | * | | | 14 | | |

Bent 51

| Zone (b.g.s) | Sample Depth (b.g.s.) | Sample I.D. | CAM 17 (mg/Kg) | WET (mg/L) | TCLP (mg/L) | TRPH (mg/Kg) | TPH-mo (mg/Kg) | Classification |
|--------------|-----------------------|--------------------------|-------------------|--------------|-------------|--------------|------------------------------------|----------------|
| 0 to 8+ feet | 0.5 foot | YB-1 YB-2 (2) | * Pb 84 | 0.2 | | 35 | 62 Composite 1000 Composite | Contaminated |
| | 1 foot | YB-1 YB-2 | * * | | | 57 1500 | | |
| | 2 feet | YB-1 YB-2 | Pb 105 Hg 2.06 | NA 0.0011 | | 27 4.2 | | |
| | 3 feet | YB-1 YB-2 (2) YB-2 | * Pb 107 * | 0.14 | | 25 480 | | |
| | 5 feet | YB-2 | * | | | 3100 | | |
| | 8 feet | YB-2 | * | | | 96 | | |

Bent 49

| Zone (b.g.s) | Sample Depth (b.g.s.) | Sample I.D. | CAM 17 (mg/Kg) | WET (mg/L) | TCLP (mg/L) | TRPH (mg/Kg) | TPH-mo (mg/Kg) | Classification |
|--------------|-----------------------|-------------|----------------|------------|-------------|--------------|----------------|----------------|
| 0 to 3+ feet | 1 foot | YB-5 | Cr 53 | 0.15 | | 26 | 540 Composite | Contaminated |
| | 2 feet | YB-5 | * | | | 6.4 | | |

| | | | | | | | | |
|--|--------|------|---|--|--|-----|--|--|
| | 3 feet | YB-5 | * | | | 410 | | |
|--|--------|------|---|--|--|-----|--|--|

Bent 48

| Zone (b.g.s) | Sample Depth (b.g.s.) | Sample I.D. | CAM 17 (mg/Kg) | WET (mg/L) | TCLP (mg/L) | TRPH (mg/Kg) | TPH-mo (mg/Kg) | Classification |
|-----------------|-----------------------------|----------------|-------------------|---------------|----------------|-----------------|-------------------|----------------|
| 0 to 8+ feet | 1 foot | YB-6 | * | | | 350 | 75 Composite | Contaminated |
| | 2 feet | YB-6 | * | | | 11 | | |
| | 3 feet | YB-6 | * | | | 750 | | |
| | 5 feet | YB-6 | * | | | 30 | | |
| | 8 feet | YB-6 | * | | | 18 | | |

Key

* - Results were less than ten times the soluble criteria defined in Title 22

NA - Data was not available

CAM 17 - California 17 metals as defined in Title 22

WET - Waste extraction test

TCLP - Total characteristic leaching principle

TRPH - Total recoverable petroleum hydrocarbons

TPH-mo - Total petroleum hydrocarbons motor oil range

b.g.s. - below ground surface

Samples were not obtained at bents 46 and 47; however, the material at these locations shall be assumed to be contaminated. Information regarding the location of all samples can be obtained from the site investigation report.

Upon completion of hazardous material excavation, temporary chain link security fence and personal protective equipment, when no longer required, as determined by the Engineer, shall be removed from the job site.

The Contractor shall implement a plan to prevent exposure of personnel working in hazardous material excavations. The Contractor's plan to prevent exposure of personnel shall consist of a physical barrier. The barrier shall be maintained by the Contractor. When no longer required, as determined by the Engineer, the physical barrier shall be removed and either decontaminated or disposed of by the Contractor. The Contractor shall prevent the flow of surface water from entering any excavation.

MEASUREMENT AND PAYMENT.--Full compensation for loading, transporting, and disposing of contaminated and hazardous material, furnishing, installing and removing physical barriers, shall be considered as included in the contract price paid per cubic yard for structure excavation of the types designated in the Engineer's Estimate and no additional compensation will be allowed therefor.

10-1.20 ASPHALT CONCRETE

Asphalt concrete shall be Type A and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

Asphalt concrete shall be produced from commercial quality asphalt and aggregates. The spreading and compacting requirements in Sections 39-6.02, "Spreading," and 39-6.03, "Compacting," of the Standard Specifications will not apply.

The asphalt concrete shall conform to the following requirements:

1. Asphalt concrete shall be produced at a central mixing plant.
2. Aggregate shall conform to the 3/4 inch maximum, coarse grading specified in Section 39-2.02, "Aggregate," of the Standard Specifications.
3. The amount of asphalt binder to be mixed with the aggregate shall be between 4 percent and 7 percent by weight of the dry aggregate as determined by the Engineer. The fifth through eighth paragraphs in Section 39-3.03, "Proportioning," of the Standard Specifications shall not apply.
4. Asphalt concrete shall be spread in one operation with a self-propelled spreader ready for compaction without further shaping.
5. Compaction shall be performed with a tandem roller weighing not less than 8 tons.
6. The finished surface shall meet the straightedge requirements of Section 39-6.03, "Compacting," of the Standard Specifications.

Paint binder will not be required.

10-1.21 CONCRETE STRUCTURES

Portland cement concrete structures shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

The first sentence of the tenth paragraph in Section 51-1.05, "Forms," of the Standard Specifications is amended to read:

Form panels for exposed surfaces shall be plywood conforming to or exceeding the requirements of U.S. Product Standard PS 1 for Exterior B-B (Concrete Form) Class I Plywood or any material which will produce a smooth uniform concrete surface substantially equal to that which would result from the use of such plywood.

The second paragraph in Section 51-1.22, "Measurement," of the Standards Specifications is amended to read:

The estimated quantity of concrete for minor structures designated as final pay in the Engineer's Estimate will not be revised as specified in Section 9-1.015, "Final Pay Items," of the Standard Specifications, when the constructed height of said minor structure, including revisions by the Engineer, is within 0.5-foot of the vertical dimension shown on the plans.

When a roughened concrete surface is shown on the plans, including surfaces inside the cored hole, the existing concrete surface shall be roughened to a full amplitude of approximately 1/4-inch by abrasive blasting, water blasting or mechanical equipment.

Cleaning and grouting of existing concrete gaps where shown on the plans, shall conform to the provisions in "Clean Expansion Joints" of these special provisions.

CLEAN EXPANSION JOINTS.--Cleaning shall include removal of all existing seal material, dirt, debris, and joint filler and shall be accomplished by methods which do not damage existing sound concrete surfaces.

The Contractor shall take necessary precautions to ensure that material removed from expansion joints does not fall onto public traffic, railroad property or private property or into the waterway beneath the bridges. The Contractor shall submit for the Engineer's approval, details for preventing material, equipment, or debris from falling on traffic or railroad property.

Materials removed from the expansion joint, except for surface dust, shall be recovered and disposed of away from the site as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Full compensation for cleaning joint and filling joint with grout as shown on the plans, shall be considered as included in the contract price paid per cubic yard for structural concrete, bridge and no additional compensation will be allowed therefor.

10-1.22 SHOTCRETE

At the Contractor's option, shotcrete may be used in place of cast-in-place concrete at infill walls and concrete column collars shown on the plans. Shotcrete shall conform to the provisions in Section 51, "Concrete Structures," and Section 53, "Shotcrete," of the Standard Specifications and these special provisions.

Shotcrete operations shall completely encase all reinforcement and other obstructions shown on the plans. Exceptional care shall be taken to properly encase the reinforcement and other obstructions with shotcrete.

Except for finish coats, shotcrete shall be applied by the wet-mix process only.

Finish coats, applied by the dry-mix process, may be used only when approved by the Engineer.

Shotcrete shall have a minimum compressive strength of 3250 pounds per square inch at 28 days or as shown on the plans, whichever is greater. No shotcrete work shall be performed prior to verification by the Engineer of the required compressive strength.

Splicing of reinforcing bars No. 7 or larger in shotcrete shall be by butt splicing only.

The Contractor shall be responsible for obtaining and testing all required preconstruction and production test cores. All coring and testing shall be at the Contractor's expense and performed in the presence of the Engineer, unless otherwise directed. The Engineer shall be notified a minimum of 24 hours prior to the Contractor performing any coring or testing operations.

All cores shall be obtained and tested for compressive strength in accordance with the specifications of ASTM Designation: C 42. Cores used for determining compressive strength shall not contain any bar reinforcement or other obstructions. The testing shall be performed at an independent testing facility approved by the Engineer. A copy of the test results shall be furnished to the Engineer within 5 days following completion of testing.

All test panels shall become the property of the Contractor and shall be disposed of as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

PRECONSTRUCTION REQUIREMENTS.--Prior to performing shotcrete work, the Contractor shall construct at least 2 preconstruction shotcrete test panels for each mixture being considered unless otherwise specified.

The nozzleperson shall have a minimum of 3000 hours experience as a nozzleperson on projects with a similar application.

At least 10 working days prior to constructing any shotcrete test panels, the Contractor shall submit to the Engineer for approval, a Quality Control Plan (QCP) for the proposed method of shotcrete placement. The plan shall include the following:

1. The number and qualifications of nozzlepersons available to place shotcrete, the number of nozzlepersons on-site at any time during the shotcrete placement, description of their work schedule, and the procedures for avoiding fatigue of any nozzleperson.
2. The proposed method of placing shotcrete, including, but not limited to, application rates, details of any proposed construction joints and their locations, and methods for achieving the required thickness and surface finish.
3. The procedure for curing shotcrete surfaces.
4. The description of a debris containment system, to be used during the cleaning of bar reinforcing steel and concrete and placing of shotcrete, as required to provide for public safety.

The Engineer shall have 10 working days to review and approve the QCP submittal after a complete plan has been received. No construction of shotcrete test panels shall be performed until the QCP is approved by the Engineer. Should the Engineer fail to complete the review within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in approving the QCP, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Preconstruction shotcrete test panels shall be constructed by the nozzlepersons and application crew scheduled to do the work, using equipment, materials, mixing proportions, ambient temperatures and procedures proposed for the work. The preconstruction shotcrete test panels shall conform to the following:

One shotcrete test panel, of the size determined by the Contractor, shall be unreinforced and shall have 3 cores taken from it and tested for compressive strength. The compressive strength shall be the average strength of the 3 cores, except that, if any core should show evidence of improper coring, the core shall be discarded and the compressive strength shall be the average strength of the remaining cores. The test panel shall be identified and submitted to the Engineer with the test results including a description of the mixture, proportions, and ambient temperature.

One shotcrete test panel shall have the same (1) thickness, (2) bar size and amount of bar reinforcement or other obstructions and (3) positioning of bar reinforcement or obstructions as the most heavily reinforced section of shotcrete to be placed. The test panel shall be square with the length of the sides equal to at least 3 times the thickness of the most heavily reinforced section of shotcrete to be placed, but not less than 30 inches. After a minimum 7 days of cure, the test panel shall be broken by the Contractor, in the presence of the Engineer, into pieces no larger than 10 inches in greatest dimension. The surfaces of the broken pieces shall be dense and free of laminations and sand pockets, and shall verify that the bar reinforcement or other obstructions are completely encased.

Both test panels shall be cured under conditions similar to the actual work.

At the option of the Contractor, cores to be used for determining the compressive strength may be taken from the reinforced test panel described above in lieu of making a separate unreinforced test panel as described above. The compressive strength shall be the average strength of the 3 cores, except that, if any core should show evidence of improper coring or contains bar reinforcement or other obstructions, the core shall be discarded and the compressive strength shall be the average strength of the remaining cores. If cores are taken from the reinforced test panel, the panel shall not be broken into pieces, as described above, until it has cured for a minimum of 14 days.

The requirements for constructing preconstruction shotcrete test panels may be eliminated, when approved by the Engineer, if a test panel report and certified compressive strength test data are furnished from a State highway project with a similar application of approximately equal thickness, including similar amounts and placement of reinforcement or other obstructions. The nozzleperson, proposed to be used, shall have constructed the test panel described in the test panel report. The test panel report shall list the names of the application crew, equipment used, materials, mixing proportions, ambient temperatures and procedures used to make the test panels. The certified compressive strength test data shall be for cores taken from the same test panels.

PLACING.--An air blowpipe shall be used during shotcrete placement to remove rebound, overspray and other debris from the areas to receive shotcrete.

Construction joints shall be tapered, and shall conform to the provisions in Sections 51-1.13, "Bonding," of the Standard Specifications.

All overspray and rebound shall be removed prior to final set and before placement of shotcrete on adjacent surfaces.

Rebound or any other material which has already exited the nozzle shall not be reused.

Shotcrete shall be cured in accordance with the provisions of Section 90-7.03, "Curing Structures," of the Standard Specifications.

When a finish coat is to be used, all loose, uneven or excess material, glaze, and rebound shall be removed by brooming, scraping, or other means and the surface left scarified. Any surface deposits which take a final set shall be removed by abrasive blasting. Prior to placing the finish coat, the receiving surface shall be washed down with an air-water blast.

TESTING AND ACCEPTANCE.--At least 3 production shotcrete test cores shall be taken from each 300 square feet or portion thereof of shotcrete placed each day. The cores shall be 3-inches in diameter. The location where cores are to be taken will be designated by the Engineer. Test cores shall be identified by the Contractor and a description of the core location and mixture, including proportions, shall be submitted to the Engineer with the test cores, immediately after coring. Cored holes shall be filled with mortar in accordance with the requirements of Section 51-1.135, "Mortar," of the Standard Specifications.

Upon receipt of the cores, the Engineer will perform a visual examination to determine acceptance, as described below. Within 48 hours after receipt, the Engineer will return the cores to the Contractor for compressive strength testing.

The compressive strength test shall be performed using the shotcrete production test cores described above. The compressive strength shall be the average strength of the 3 cores, except that, if any core should show evidence of improper coring, the core shall be discarded and the compressive strength shall be the average strength of the remaining cores.

The basis of acceptance for production shotcrete test cores shall be (1) that the core is dense and free of laminations and sand pockets, and shows that the reinforcement or other obstructions are completely encased and (2) the same as specified for test cylinders in the fourth and fifth paragraphs of Section 90-9.01, "General," of the Standard Specifications.

If any production test core shows signs of defective shotcrete as described in (1) above, the shotcrete represented by such test core will be rejected, unless the Contractor, at the Contractor's expense, obtains and submits evidence acceptable to the Engineer that the strength and quality of the shotcrete placed in the work are acceptable.

The surface finish of the shotcrete shall conform to the provisions of Section 51-1.18, "Surface Finishes," of the Standard Specifications.

MEASUREMENT AND PAYMENT.--Shotcrete will be measured and paid for by the cubic yard as structural concrete, bridge.

Full compensation for the Quality Control Plan, constructing and breaking test panels, furnishing and testing cores and patching cored holes shall be considered as included in the contract price paid per cubic yard for structural concrete, bridge and no additional compensation will be allowed therefor.

FALSEWORK.--Falsework shall be designed and constructed in conformance with the requirements in Section 51-1.06, "Falsework," of the Standard Specifications and these special provisions.

Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications is amended by adding the following after the first paragraph:

The falsework drawings shall include details of the falsework removal operations showing the methods and sequences of removal and equipment to be used.

The seventeenth paragraph of Section 51-1.06A is amended to read:

Temporary bracing shall be provided, as necessary, to withstand all imposed loads during erection, construction and removal of any falsework. The falsework drawings shall show provisions for such temporary bracing or methods to be used to conform to this requirement during each phase of erection and removal. Wind loads shall be included in the design of such bracing or methods.

The fifth paragraph of Section 51-1.06A(1), "Design Loads," of the Standard Specifications is amended to read:

The minimum horizontal load to be allowed for wind on heavy-duty steel shoring or steel pipe column falsework having a vertical load carrying capacity exceeding 30 kips per leg or column shall be the sum of the products of the wind impact area, shape factor, and the applicable wind pressure value for each height zone. The wind impact area is the total projected area of all the elements in the tower face or falsework bent normal to the direction of the applied wind. The shape factor shall be taken as 2.2 for heavy-duty shoring and 1.0 for pipe column falsework. Wind pressure values shall be determined from the following table:

| Height Zone (Feet above ground) | <u>Wind Pressure Value</u> | |
|------------------------------------|--|--------------------|
| | Shores or Columns Adjacent to Traffic | At Other Locations |
| 0 to 30 | 20 psf | 15 psf |
| 30 to 50 | 25 psf | 20 psf |
| 50 to 100 | 30 psf | 25 psf |
| Over 100 | 35 psf | 30 psf |

The first 2 sentences of the sixth paragraph of Section 51-1.06A(1), "Design Loads," of the Standard Specifications are amended to read:

The minimum horizontal load to be allowed for wind on all other types of falsework, including falsework supported on heavy-duty shoring or pipe column falsework, shall be the sum of the products of the wind impact area and the applicable wind pressure value for each height zone. The wind impact area is the gross projected area of the falsework and any unrestrained portion of the permanent structure, excluding the areas between falsework bents or towers where diagonal bracing is not used.

The second entry under "Timber" in the second paragraph of Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications is amended to read:

Compression parallel to the grain $\frac{480,000}{(L/d)^2}$ psi, but not to exceed 1,600 psi.

The last paragraph under "Timber" in the second paragraph of Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications is amended to read:

Timber connections shall be designed in accordance with the procedures, stresses and loads permitted in the Falsework Manual as published by the Department of Transportation, Division of Structures, Office of Structure Construction.

The third paragraph of Section 51-1.06B "Falsework Construction" of the Standard Specifications is amended to read:

When falsework is supported on piles, the piles shall be driven and the actual bearing value assessed in conformance with Section 49, "Piling," as specified in these specifications.

For falsework piles with a calculated loading capacity greater than 100 tons, the contractor shall conduct dynamic monitoring of pile driving and conduct penetration and bearing analyses based on a wave equation analysis. Said analysis shall be signed by an Engineer who is licensed as a Civil Engineer in California and submitted to the Engineer prior to completion of falsework erection.

The first paragraph of Section 51-1.06C, "Removing Falsework," of the Standard Specifications is amended to read:

Falsework supporting any span of a simple span bridge shall not be released before 10 days after the last concrete, excluding concrete above the bridge deck, has been placed. Unless otherwise permitted by the Engineer, falsework supporting any span of a continuous or rigid frame bridge shall not be released before 10 days after the last concrete, excluding concrete above the bridge deck, has been placed in that span and in the adjacent portions of each adjoining span for a length equal to at least 1/2 the length of the span where falsework is to be released.

Section 51-1.06C, "Removing Falsework," of the Standard Specifications is amended by adding the following after the seventh paragraph:

Unless otherwise specified, removing falsework supporting any span of structural members subject to bending, shall conform to the requirements for removing falsework supporting any span of a simple span bridge.

Temporary crash cushion modules, as shown on the plans and conforming to the provisions in "Temporary Crash Cushion Module," elsewhere in these special provisions, shall be installed at the approach end of temporary railings less than 15 feet from the edge of a traffic lane. For two-way traffic openings, temporary crash cushion modules shall be installed at the departing end of temporary railings less than 6 feet from edge of a traffic lane.

The installation of temporary crash cushion modules, if required, shall be complete before falsework erection is begun. Temporary crash cushion modules at falsework shall not be removed until such removal is approved by the Engineer.

Temporary crash cushion modules installed as specified above will be measured and paid for as provided in "Temporary Crash Cushion Module," of these special provisions except that when the Engineer's Estimate does not include a contract item for temporary crash cushion modules, full compensation for furnishing, placing, maintaining, repairing, replacing and removing the temporary crash cushion modules at falsework locations as specified in these special provisions shall be considered as included in the contract prices paid for the various items of work requiring falsework and no separate payment will be made therefor.

ELASTOMERIC BEARING PADS.--Elastomeric bearing pads shall conform to the provisions in Section 51-1.12H, "Elastomeric Bearing Pads," of the Standard Specifications and these special provisions.

The fifth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearings," of the Standard Specifications is amended to read:

The peel strength test will be performed after immersing the sample in water for a minimum of 10 days. The bond between elastomer and fabric shall be such that when a sample is tested for separation, it shall have a minimum peel strength of 30 pounds per inch when tested in accordance with California Test 663.

The last 2 sentences of the tenth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearings," of the Standard Specifications are amended to read:

Pads shall be available for sampling at least 4 weeks in advance of intended use. All sample pads for testing shall be furnished by the Contractor at his expense.

The fifth subparagraph of the first paragraph of Section 51-1.12H(2), "Steel Reinforced Elastomeric Bearings," of the Standard Specifications is amended to read:

One sample bearing shall be furnished to the Engineer from each lot of bearings to be furnished for the contract. Samples shall be available at least 3 weeks in advance of intended use. The sample bearing shall be one of the following:

| BEARING PAD THICKNESS AS SHOWN ON THE PLANS | SAMPLE BEARING |
|---|--|
| 2 inches or less..... | Smallest complete bearing shown on the plans. |
| Greater than 2 inches..... | * 2.25±0.125 inch thick sample not less than 8 inches by 12 inches in plan and cut by the manufacturer from the center of one of the thickest complete bearings. |

* The sample bearing plus remnant parts of the complete bearing shall be furnished to the Engineer.

MEASUREMENT AND PAYMENT.--Measurement and payment for concrete in structures shall conform to the provisions in Sections 51-1.22, "Measurement," and 51-1.23, "Payment," of the Standard Specifications and these special provisions.

Full compensation for roughening existing concrete surfaces to a full amplitude of approximately 1/4-inch, where shown on the plans, shall be considered as included in the contract price paid per cubic yard for structural concrete, bridge and no separate payment will be made therefor.

10-1.23 RUBBER FENDER

This work consists of furnishing and installing rubber fenders as shown on the plans and as specified in these special provisions.

The rubber fender dimensions shall be as shown on the plans. The fender shall have a minimum energy absorption of 3 ft-kips per foot at 50 percent deflection with a reaction of 12 kips per foot, maximum. Rubber compounds shall conform to the specifications of ASTM D 2000.

The rubber fender shall be manufactured by a firm that is regularly engaged in the making of specialized rubber products in waterfront wharves, docks and fender systems.

Full compensation for rubber fender shall be considered as included in the contract prices paid for the various contract items of work involved and no separate payment will be made therefor.

10-1.24 VISCOUS DAMPERS

Viscous dampers, consisting of a metal housed piston and piston head assembly filled with silicone fluid, shall conform to the details shown on the plans, to the provisions in Section 55, "Steel Structures," of the Standard Specifications and these special provisions.

The viscous damper manufacturer shall have successfully completed the pre-qualification testing program prior to advertisement of this contract. The pre-qualification testing program shall be performed in accordance with "A Test Plan for the Characterization and Qualification of Highway Bridge Isolator and Damping Devices," dated February 23, 1995, by the California Department of Transportation, and shall be performed under the supervision of the Engineer at a facility approved by the Engineer.

A list of viscous damper manufacturers that are in the pre-qualification testing program and the document "A Test Plan for the Characterization and Qualification of Highway Bridge Isolator and Damping Devices," may be obtained from the New Technology Management Branch, Office of Earthquake Engineering, California Department of Transportation, Tel: (916) 227-8247, Fax: (916) 227-8898.

The viscous dampers shall be designed for the loading conditions, displacements, and criteria shown on the plans. The viscous damper design shall be confirmed by the certified prototype test results for the dampers. In addition, if the plans or these special provisions indicate limiting parameters for a damper, the damper shall conform to those parameters.

Damper design shall display an average resisting force of 200 kips \pm 5% during prototype and proof testing during peak velocity (24 in/sec). The peak force from the first cycle shall not drop more than 5% from the peak force of the fifth cycle.

Dampers shall be supplied complete with the spherical joints, pins and spacers needed to connect them to the damper brackets as shown on the plans. Design and fabrication of the spherical joints and pins shall be in accordance with the requirements of these special provision. Pins shall be supplied complete with any ancillary hardware needed to permanently secure them in place.

No viscous damper shall be installed until the Engineer has reviewed and approved, in writing, the working drawings, the prototype testing and the proof testing for the viscous damper system to be used.

WORKING DRAWINGS.--The Contractor shall submit complete working drawings for the viscous dampers to the Office of Structure Design, Documents Unit, P.O. Box 942874, Sacramento, CA 94272-0001 (1801 30th Street, Sacramento, CA 95816) in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. For initial review, 6 sets of drawings shall be submitted. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to said Office for final approval and use during construction.

Working drawings shall be either 11" x 17" or 22" x 34" in size and each drawing and calculation sheet shall include the State assigned designations for the contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Post mile. The manufacturer's name, address, and phone number shall be shown on the working drawings. Each sheet shall be numbered in the lower right hand corner and shall contain a blank space in the upper right hand corner for future contract sheet numbers.

The working drawings shall contain all information required for the proper construction of the viscous dampers. The working drawings shall be supplemented with a fabrication quality control program, detailed descriptions of the prototype and proof test programs, an installation manual, inspection and maintenance manuals, and a certified copy of the results of all tests performed on the viscous dampers and materials. The working drawings shall be supplemented with calculations for the viscous damper design for the particular installation. The working drawings shall include a list of all of the materials and components to be used in the viscous dampers. The working drawings shall include a complete list of all ASTM or other standards that shall be adhered to in the fabrication of the viscous dampers. The working drawings shall list the components that will be permanently deformed, if any, during prototype or proof testing with calculations showing the anticipated stress in the components at each increment of the maximum lateral force or maximum lateral

displacement. Each working drawing or calculation sheet shall be signed by an engineer who is registered as a Mechanical or Civil Engineer in the State of California.

The working drawings and supplements shall be submitted in two parts. The Contractor shall allow 6 weeks following the submittal of part 1 for the Engineer's review of the working drawings and supplements. The Contractor shall not start the fabrication of prototype test specimens until the Engineer has reviewed and approved the submittal of part 1. The Contractor shall allow 4 weeks following the submittal of part 2 for the Engineers review of the prototype test results. The Contractor shall not start proof testing until the Engineer has reviewed and approved the submittal of part 2. The working drawings and supplements shall be submitted within the following time limits:

| ITEMS | TIME LIMIT |
|--|---|
| PART 1: Working drawings, calculations, materials and components list, quality control program, and detailed descriptions of the prototype and proof damper test programs. | Within 8 weeks after contract approval. |
| PART 2: Certified copy of the results of all prototype tests, installation manual, and inspection and maintenance manual. | Within 24 weeks following approval of the viscous dampers working drawings. |

Within 3 weeks after final working drawing approval, one set of the corrected good quality prints on 60 pound (minimum) bond paper (22" x 34" in size) of all working drawings prepared by the Contractor for the viscous dampers shall be furnished to the Office of Structure Design, Documents Unit.

Each shipment of viscous dampers shall be accompanied by a Certificate of Compliance in accordance with the provisions of Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The certificate shall certify that the viscous dampers conform to the pre-qualified design and material requirements, and were manufactured in accordance with the approved quality control program. The certification shall be supported by a copy of the results of all prototype and proof (production) tests performed on the dampers and damper materials.

Tests results shall be certified correct and signed by the testing laboratory personnel who conducted the tests and interpreted the test results.

Should the Engineer fail to complete the review of the working drawing submittal within the time specified and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the working drawing submittal, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

MATERIALS.—All materials and processes used in the manufacturing of the viscous dampers shall be identified in the working drawings by specifications or standards.

Dissimilar materials as defined in MIL-STD-889B shall not be used in contact with each other, without protection against electrolytic corrosion. Dissimilar metal joints shall not be used without a non-metallic separator or gasket of at least .06 inch thickness. The use of aluminum, aluminum alloys, magnesium, magnesium alloys, beryllium and beryllium alloys will not be allowed. The use of non-stainless steel internally exposed to internal pockets of air or gas (such as that which could occur in an internal reservoir, and plumbing to the reservoir) will not be permitted.

Castings used for pressure vessel parts not subject to tensile or bending stresses, such as covers, handles, and similar items, whose failure would not affect the structural integrity or performance characteristics of the unit, shall conform to the provisions ASTM Designation: A 27, Class 2. Castings used for pressure vessel parts subjected to tensile or bending stresses shall conform to the provisions in ASTM Designation: A 747.

All age-sensitive parts, non-metallic packing, seals, wipers or gaskets shall be of non-age-sensitive materials.

Spherical bearings shall be fabricated from stainless steel, and may be of the lined type with non-metallic liners.

Piston rods and any part that slides relative to a seal shall be manufactured from stainless steel. Operating fluid used in the dampers shall be a non-toxic, non-flammable, and cosmetically inert silicone in accordance with the provisions in Federal Specification: VV-D-1078 (B). Petro-chemical fluids shall not be used.

The components of the damper that are pressure vessels shall be of non-tie rod type construction, without externally supported heads or end caps. Welded construction or castings of any type shall not be permitted for pressure vessel construction.

Pressure vessels and seals shall be rated for a minimum burst pressure of 200% of the maximum dynamic operating pressure.

The manufacturer shall establish and maintain a manufacturing/processing control system including written process specifications and procedures, in accordance with Section 6-1.01, "Source of Supply and Quality of Materials," of the Standard Specifications and these special provisions and one of the following:

Control of Quality MIL-Q-9858A: The seller shall provide and maintain a system that complies with Military Specification: MIL-Q-9858A, "Quality Program Requirements."

Control of Quality MIL-I-45208A: The seller shall provide and maintain a system that complies with Military Specification: MIL-I-45208A, "Inspection System Requirements."

Control of Quality ISO 9001: The seller shall provide and maintain a system that complies with U.S. requirements of the International Standard Organization (ISO) 9001 model for quality assurance in design, development, production, installation and servicing. Certification to ISO 9001 by an individual or firm located outside the United States of America is prohibited.

All manufacturing techniques and materials used for prototype and production dampers shall be similar to those used for the pre-qualification tests.

All welding shall be in accordance with AWS D 1.1.

The brazing of steels, copper, copper alloys and nickel alloys shall conform to Military Specification: MIL-B-7883B.

The exterior finish of the unit, including the color and finish type required shall be recommended by the manufacturer and submitted to the Engineer for approval.

The dampers shall be designed with a minimum factor of safety of 1.5 times for design loads and yield of materials, and shall withstand a minimum lateral center load of 2.0 times the self weight of the damper in its maximum elongated position.

Components exposed to the atmosphere shall be protected against corrosion and the piston rod shall be protected from dust.

The viscous dampers shall be constructed to be maintenance free over a period of at least 10 years. Inspection requirements and procedures shall be provided by the manufacturer and shall be approved by the Engineer. The damper shall be supplied with a 15 year warranty for all parts.

The viscous dampers shall be designed and constructed so that installation, removal, or replacement, if necessary, shall be a simple process not requiring any special tools or methods.

All damper connections shall be designed to accommodate a minimum 5 degree transverse rotation without damage to the device.

The unit shall be capable of operating at the design levels for the environmental conditions, without degradation of performance as a result of maximum/minimum operating temperature.

The unit shall be designed to allow a dynamic leakage level that will have no effect on performance over the useful life of the damper. This leakage shall be quantified in a way that is easily measurable. Under non-seismic conditions, static seals shall not leak externally.

When installed, the unit shall be capable of operating in an ambient air temperature range of 20° F to 110° F.

The unit shall be designed to withstand relative humidity up to 100 percent, including condensation due to temperature change.

Installation Manual.--The Contractor shall submit 6 installation manuals for the dampers for review and approval by the Engineer prior to installation of the dampers. The installation manual shall include the following:

1. The method of installation of the dampers including installation sequence and setting diagram.
2. The method of adjustment of the dampers for temperature change as shown on the plans, and for errors in the positioning of the damper brackets.
3. Temporary and permanent attachment of the dampers to the bridge; including the installation and securing in place of the pins connecting the dampers to the damper brackets shown on the plans.
4. Requirements for storage of the dampers and details of temporary support of the dampers for shipping and handling.

Inspection and Maintenance Manual.--The Contractor shall submit 6 inspection and maintenance manuals for the dampers for review and approval by the Engineer prior to completion of the project. The inspection and maintenance manual shall include the following:

1. Inspection requirements for the dampers, including the recommended frequency of inspection. The manual shall include the specific observations to be made, and the acceptable range of values.
2. Maintenance requirements for the dampers, including the recommended frequency of maintenance.
3. Contact and telephone number for maintenance questions.

TESTING.—All viscous dampers shall be prototype and proof tested to verify compliance with the physical parameters and energy requirements shown on the plans. All testing shall be performed within the United States. The ambient temperature of the testing facility and the test article shall be 70 degrees F. \pm 20 degrees at the start of the test.

The temperature of the dampers shall be monitored continuously in a minimum of two locations for all tests which best represents the internal fluid temperature starting a minimum of 5 minutes prior to testing and ending 15 minutes after testing.

The Contractor shall notify the Engineer, in writing, at least twenty one days prior to the start of the viscous damper fabrication or testing. All tests shall be performed in the presence of the Engineer at a test facility approved by the Engineer.

Any break-away or yielding wind resistant components which are permanently deformed during proof testing shall be replaced with identical components before the damper is installed in the structure.

The hysteretic behavior of the specimens for the prototype and proof tests shall remain stable and the specimens shall show no signs of distress at all loading conditions.

Prototype Tests.--For each viscous damper type shown on the plans, one full scale prototype damper shall be manufactured and tested in accordance with these special provisions. All devices shall be tested over the full design stroke range to verify stroke capacity.

All prototype tests shall be performed at the same test facility.

Viscous damper output shall be symmetrical in both compression and tension.

Viscous damper output shall not be sensitive to the initial position of the rod stroke position.

Viscous damper output shall be consistent between two units of the same type.

For each damper type, dynamic tests shall be performed in accordance with the following table:

| Damper Location | Tests |
|-----------------|--|
| Tower E9 | 5 fully reversed cycles with +/- 16 inch stroke at 0.30 Hz, 0.25 Hz, 0.20 Hz, 0.15 Hz and 0.30 Hz. |

Prototype viscous damper test data for each production viscous damper type shall be submitted within seven calendar days after the completion of testing.

Prototype viscous dampers may be used for installation as approved by the Engineer.

Proof Tests.--All viscous dampers to be placed in the structure shall be proof tested. The proof tests shall verify the capacity of each damper. Acceptance of the damper is contingent upon the tests results. All dampers shall be tested over the full design stroke range to verify the stroke capacity.

All proof tests shall be performed at the same facility.

Proof pressure tests shall be performed on each viscous damper. The proof pressure test shall consist of applying an internal pressure, equivalent to 200% of the maximum dynamic operating pressure of the damper, as shown on the plans. The internal pressure shall be maintained for 120 seconds.

The proof dynamic tests shall be performed for each viscous damper to be installed in the structure in accordance with the following table:

| Damper Location | Tests |
|-----------------|---|
| Tower E9 | 5 fully reversed cycles with +/- 16 inch stroke at 0.25 Hz. |

Proof test data shall be submitted to the Engineer within 7 calendar days after the completion of all production proof testing.

MEASUREMENT AND PAYMENT.--The quantity of viscous dampers will be determined as units from the actual count of the dampers in the completed work.

The contract unit price paid for viscous dampers shall include full compensation for furnishing all labor, materials (including sample dampers used for testing), tools, equipment and incidentals and for doing all the work involved in designing, prototype and proof testing, fabricating, and constructing the viscous dampers with connection components, including bracket assemblies complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

No payment will be made for viscous dampers which fail to meet any of the acceptance criteria.

Full compensation for any break-away or yielding wind-restraint components required, and revisions to the structure or other facilities made necessary by the use of a particular viscous damper, shall be considered as included in the contract unit price paid for viscous dampers and no separate payment will be made therefor.

If a portion or all of viscous dampers are tested at a site more than 300 air line miles from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Payment to the Contractor for viscous dampers will be reduced \$ 8,000 for each testing site located more than 300 air lines miles from both Sacramento and Los Angeles, or in the case of each testing site located more than 1,500 air line miles from both Sacramento and Los Angeles, payment will be reduced \$15,000.

10-1.25 DRILL AND BOND DOWEL (EPOXY CARTRIDGE)

Drilling and bonding dowels or threaded rods with epoxy cartridge systems shall conform to the details shown on the plans and the requirements in these special provisions.

Reinforcing steel dowels shall conform to the provisions for bar reinforcement in "Reinforcement" of these special provisions.

Where shown on the plans, threaded rods shall conform to the provisions in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications, except that galvanizing will not be required. The threaded rods shall be installed in accordance with these requirements for dowels.

The epoxy cartridge system shall consist of (1) a bonding material that is a two-component epoxy contained in a cartridge having two separate chambers and (2) an applicator that is a special dispensing gun having a replaceable static mixing nozzle. The epoxy cartridge system used shall be appropriate for the service temperature and ambient concrete temperature at the time of installation.

The Contractor may select an epoxy cartridge system which has been evaluated and found acceptable for use on this project by the Transportation Laboratory. For a listing of acceptable epoxy cartridge systems for this project, contact the Transportation Laboratory, telephone: (916) 227-7000.

If the Contractor elects to use an epoxy cartridge system other than those accepted by the Transportation Laboratory, the determination as to the quality and suitability of the alternative epoxy cartridge system will be made in the same manner as provided for in Section 6-1.05, "Trade Names and Alternatives," of the Standard Specifications.

Each epoxy cartridge shall be clearly and permanently marked with the manufacturer's name, model number of epoxy cartridge system, manufacturing date, and lot number. Each carton of epoxy cartridges shall contain the manufacturer's recommended installation procedures, minimum cure time, and such warning or precautions concerning the contents as may be required by State or Federal Laws and Regulations.

Each shipment of the epoxy cartridge system, regardless of which epoxy product is furnished, shall be accompanied by a Certificate of Compliance as provided in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The certificate shall state that the material complies in all respects to the specifications and data submitted in obtaining acceptance.

The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes. If reinforcement is encountered during drilling, before the correct depth is attained, the Engineer shall be notified. Unless the Engineer approves coring through the reinforcement, the hole will be rejected and a new hole, in which reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the correct depth.

Unless otherwise specified or shown on the plans, the hole depth and the hole diameter shall be as recommended by the manufacturer. The drilled holes shall be clean and dry at the time of placing the bonding material and the steel dowels.

After bonding, dowels shall be supported as necessary to prevent movement during curing and shall remain undisturbed until the epoxy has cured the minimum time specified by the manufacturer. Dowels that are improperly bonded, as determined by the Engineer, will be rejected. New holes shall be drilled, and new dowels placed and securely bonded to the concrete at the Contractor's expense.

Unless otherwise provided, reinforcing steel dowels to be bonded into drilled holes will be paid for as bar reinforcing steel (bridge).

Unless otherwise provided, drilling and bonding dowels with epoxy cartridges will be measured and paid for by the unit as drill and bond dowel (epoxy cartridge). The number of units to be paid for will be determined from actual count of the completed units in place.

The contract unit price paid for drill and bond dowel (epoxy cartridge) shall include full compensation for furnishing all labor, materials (except reinforcing steel dowels), tools, equipment and incidentals, and for doing all work involved in

drilling the holes, including coring through reinforcement when approved by the Engineer, and bonding the dowels with epoxy cartridges, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.26 DRILL AND BOND DOWELS

Drilling and bonding dowels shall conform to the details shown on the plans, the provisions in Section 83-2.02D(1), "General," of the Standard Specifications and these special provisions.

Dowels shall conform to the provisions for bar reinforcement in "Reinforcement" elsewhere in these special provisions.

If reinforcement is encountered during drilling, before specified depth is attained, the Engineer shall be notified. Unless the Engineer approves coring through the reinforcement, the hole will be rejected and a new hole, in which reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the depth shown on the plans.

Unless otherwise provided, dowels to be bonded into drilled holes will be paid for as bar reinforcing steel (bridge).

Unless otherwise provided, drilling and bonding dowels will be measured and paid for by the linear foot determined by the number and the required depth of holes as shown on the plans, or as ordered by the Engineer.

The contract price paid per linear foot for drill and bond dowel shall include full compensation for furnishing all labor, materials (except reinforcing steel dowels), tools, equipment, and incidentals, and for doing all the work involved in drilling the holes, including coring through reinforcement when approved by the Engineer, and bonding the dowels, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

PRESSURE GROUT DOWEL.--Holes drilled full length through an existing concrete member as shown on the plans shall be grouted under pressure. Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting" of the Standard Specifications.

After dowel placement, ends of the drilled hole containing the dowel shall be sealed, with one vent tube and an injection feed tube. The tubes shall be placed in the hole in a manner which will allow the air to vent and the hole to be completely filled with grout. Grout shall be pumped through the injection tube and continuously wasted until no visible slugs or other visible evidence of water or air are ejected. Sufficient pressure shall be achieved to insure the hole is completely filled with grout and is free of voids.

Dowels and reinforcement to be pressure grouted shall conform to the provisions in "Reinforcement" elsewhere in these special provisions.

Drill and pressure grout dowels will be measured and paid for by the linear foot as drill and bond dowels.

10-1.27 CORE CONCRETE

Coring concrete shall consist of coring holes through reinforced concrete bridge members as shown on the plans and in conformance with the requirements in these special provisions.

The holes shall be cored by methods that will not shatter or damage the concrete adjacent to the holes.

Water for core drilling operations shall be from the local domestic water supply or shall not contain more than 1,000 parts per million of chlorides as Cl, nor more than 1,300 parts per million of sulfates as SO₄, nor shall it contain any impurities in a sufficient amount to cause discoloration of the concrete or produce etching of the surface.

Water from core drilling operations shall not be permitted to fall on public traffic, to flow across shoulders or lanes occupied by public traffic, or to flow into gutters or other drainage facilities.

Coring concrete will be measured and paid for by the linear foot as core concrete of the sizes listed in the Engineer's Estimate. The cored concrete will be measured along the centerline of the hole without deduction for expansion joints.

The contract price paid per linear foot for core concrete of the sizes listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in coring the holes, including control of water from core drilling, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

At the Contractor's option, holes may be cored through concrete deck for concrete placement where shown on the plans. Full compensation for coring optional holes for concrete placement and filling cored holes with concrete shall be considered as included in the contract price paid per cubic yard for structural concrete, bridge and no separate payment will be made therefor.

10-1.28 CORE AND PRESSURE GROUT DOWELS

Coring and pressure grouting dowels shall consist of coring holes through concrete, placing dowels, and filling the holes with pressurized grout, as shown on the plans and in conformance with the requirements in these special provisions.

Dowels to be placed in the cored holes shall conform to the provisions for bar reinforcement in "Reinforcement" elsewhere in these special provisions.

Dowels to be pressure grouted in cored holes will be paid for as bar reinforcing steel (bridge).

The holes shall be cored by methods that will not shatter or damage the concrete adjacent to the holes.

Water for core drilling operations shall be from the local domestic water supply or shall not contain more than 1,000 parts per million of chlorides as Cl, nor more than 1,300 parts per million of sulfates as SO₄, nor shall it contain any impurities in a sufficient amount to cause discoloration of the concrete or produce etching of the surface.

Concrete areas and steel surfaces to be in contact with the grout shall be cleaned of all loose or foreign material that would in any way prevent bonding, and concrete holes shall be flushed with water and allowed to dry to a surface dry condition immediately prior to grouting.

Grout shall conform to the requirements of either ASTM Designation: C 1107, Grade B, or ASTM Designation: C 845, Type K, and shall provide a minimum compressive strength of 5000 pounds per square inch at 28 days when tested by California Test 551. The grout shall be mixed in accordance with the manufacturer's recommendations. Water shall comply with the provisions for water for prestressed concrete work as specified in Section 90-2.03, "Water," of the Standard Specifications.

Admixtures shall not contain more than 500 parts per million of chlorides as Cl, when tested by California Test 422, and shall not contain more than 2500 parts per million of sulfates as SO₄, when tested by California Test 417.

After dowel placement, the ends of the cored hole containing the dowel shall be sealed. A vent tube shall be placed at one end and one injection feed tube at the other end. The vent tube and injection feed tube shall be placed in the same end for cored holes that have only one end. The tubes shall be placed in the hole in a manner which will allow the air to vent and the hole to be completely filled with grout. Sufficient pressure shall be achieved to ensure that the hole is free of voids. Grout shall be pumped into the holes and continually wasted until no visible slugs or other visible evidence of water or air are ejected.

Grout or water shall not be permitted to flow into any waterway, on to public traffic, across shoulders or lanes occupied by public traffic, or into gutters or other drainage facilities.

Coring and pressure grouting dowels will be measured and paid for by the linear foot. The cored concrete will be measured along the centerline of the hole.

The contract price paid per linear foot for core and pressure grout dowels shall include full compensation for furnishing all labor, materials, except dowels, tools, equipment, and incidentals, and for doing all work involved in coring the holes, and pressure grouting the holes, including control of water from core drilling, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

10-1.29 REINFORCEMENT

Reinforcement shall conform to the provisions in Section 52, "Reinforcement," of the Standard Specifications and these special provisions.

Attention is directed to "Welding Quality Control" elsewhere in these special provisions.

The first paragraph of Section 52-1.02A, "Bar Reinforcement," of the Standard Specifications is amended as follows:

Reinforcing bars shall be low-alloy steel deformed bars conforming to the specifications of ASTM Designation: A 706/A 706M, except that deformed or plain billet-steel bars conforming to ASTM Designation: A 615/A 615M, Grade 40 or 60, may be used as reinforcement in the following:

1. Slope and channel paving;
2. Minor structures;
3. Sign and signal foundations (pile and spread footing types);
4. Roadside rest facilities; and
5. Concrete barrier Type 50 and Type 60 series and temporary railing.

Deformations specified in ASTM Designation: A 706/A 706M will not be required on bars used as spiral or hoop reinforcement in structures and concrete piles.

Section 52-1.02D, "Reinforcing Wires and Plain Bars," of the Standard Specifications is amended to read:

52-1.02D Reinforcing Wire.—Wire used as reinforcement in structures and concrete piles, as shown on the plans, shall be cold drawn steel wire conforming to the specifications of ASTM Designation: A 82.

The last paragraph of Section 52-1.07, "Placing," of the Standard Specifications is amended to read:

Whenever a portion of an assemblage of bar reinforcing steel that is not encased in concrete exceeds 20 feet in height, the Contractor shall submit to the Engineer for approval, in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," working drawings and design calculations for the temporary support system to be

used. The working drawings and design calculations shall be signed by an engineer who is registered as a Civil Engineer in the State of California. The temporary support system shall be designed to resist all expected loads and shall be adequate to prevent collapse or overturning of the assemblage. If the installation of forms or other work requires revisions to or temporary release of any portion of the temporary support system, the working drawings shall show the support system to be used during each phase of construction. The minimum horizontal wind load to be applied to the bar reinforcing steel assemblage, or to a combined assemblage of reinforcing steel and forms, shall be not less than 20 pounds per square foot on the gross projected area of the assemblage.

The sixth paragraph of Section 52-1.08, "Splicing," of the Standard Specifications is amended to read:

Except when otherwise specified, mechanical lap splicing shall conform to the details shown on the plans, the requirements for mechanical butt splices as specified in this Section 52-1.08, and Sections 52-1.08C, "Mechanical Butt Splices," 52-1.08D, "Qualification of Welding and Mechanical Splicing," and 52-1.08E, "Job Control Tests," and the following:

The mechanical lap splice shall be a unit consisting of a sleeve, in which the reinforcing bars are positioned, and a wedge driven through holes in the sleeve and between the reinforcing bars. The mechanical lap splice shall only be used for splicing non-epoxy-coated deformed reinforcing bars Nos. 4, 5 and 6. One mechanical lap splice unit per splice shall be used.

The eighth and ninth paragraphs of Section 52-1.08, "Splicing," of the Standard Specifications are amended to read:

Unless otherwise shown on the plans or approved by the Engineer, splices in adjacent reinforcing bars at any particular section shall be staggered. The minimum distance between staggered lap splices or mechanical lap splices shall be the same length required for a lapped splice in the largest bar. The minimum distance between staggered butt splices shall be 2 feet. All distances shall be measured between the midpoints of the splices along a line which is centered between the axes of the adjacent bars.

Completed butt splices shall develop a minimum tensile strength, based on the nominal bar area, of 63,000 psi for ASTM Designation: A 615/A 615M Grade 40 bars, and of 80,000 psi for ASTM Designation: A 615/A 615M Grade 60 and ASTM Designation: A 706/A 706M bars. If butt splices are made between two bars of dissimilar strengths, the minimum required tensile strength for the splice shall be that required for the weaker bar.

The second sentence of the eleventh paragraph of Section 52-1.08, "Splicing," of the Standard Specifications is amended to read:

Job control tests shall be made on sample splices representing each lot of mechanical butt splices as provided in Section 52-1.08E, "Job Control Tests."

Section 52-1.08B, "Butt Welded Splices," of the Standard Specifications is replaced with the following:

52-1.08B Butt Welded Splices.— All butt welded splices in reinforcing bars shall be complete joint penetration butt welds conforming to the requirements in AWS D1.4, and the requirements of these specifications and the special provisions. At the option of the Contractor, shop produced resistance butt welds that are produced by a fabricator who is approved by the Transportation Laboratory may be used.

Only the joint details and dimensions as shown in Figure 3.2, "Direct Butt Joints," of AWS D 1.4-92, shall be used for making complete joint penetration butt welds of bar reinforcement. Split pipe backing shall not be used.

Material used as backing for complete joint penetration butt welds of bar reinforcement shall be a flat plate conforming to the requirements of ASTM Designation: A 709, Grade 36. The flat plate shall be 0.25-inch thick with a width, as measured perpendicular to the axis of the bar, equal to the nominal diameter of the bar, and a length which does not exceed twice the nominal diameter of the bar. The flat plate backing shall be fitted tightly to the bar with the root of the weld centered on the plate. Any bar deformation or obstruction preventing a tight fit shall be ground smooth and flush with the adjacent surface. Tack welds used to fit backing plates shall be within the weld root area so that they are completely consumed by the finished weld. Backing plates shall not be removed.

Butt welds shall be made with multiple weld passes using a stringer bead without an appreciable weaving motion. The maximum stringer bead width shall be 2.5 times the diameter of the electrode and slagging shall be performed between each weld pass. Weld reinforcement shall not exceed 1/8-inch in convexity.

Before any electrodes or flux-electrode combinations are used, the Contractor, at the Contractor's expense, shall furnish certified copies of test reports for all the pertinent tests specified in AWS A5.1, AWS A5.5, AWS A5.18 or AWS A5.20, whichever is applicable, made on electrodes or flux-electrode combinations of the same class, brand and nearest specified size as the electrodes to be used. The tests may have been made for process qualification or quality control, and shall have been made within one year prior to manufacture of the electrodes and fluxes to be

used. The report shall include the manufacturer's certification that the process and material requirements were the same for manufacturing the tested electrodes and the electrodes to be used. The forms and certificates shall be as directed by the Engineer.

Electrodes for manual shielded metal arc welding of ASTM Designation: A 615/A 615M, Grade 60 bars shall conform to the requirements of AWS A5.5 for E9018-M or E10018-M electrodes.

Electrodes for manual shielded metal arc welding of A 706/A 706M bars shall conform to the requirements of AWS A5.5 for E8016-C3 or E8018-C3 electrodes.

Solid and composite electrodes for semiautomatic gas metal-arc and flux-cored arc welding of Grade 40 reinforcing bars shall conform to the requirements of AWS A5.18 for ER70S-2, ER70S-3, ER70S-6 or ER70S-7 electrodes; or AWS A5.20 for E70T-1, E70T-5, E70T-6 or E70T-8 electrodes.

Electrodes for semiautomatic welding of ASTM Designation: A 615/A 615M, Grade 60 and ASTM Designation: A 706/A 706M bars shall produce a weld metal deposit with properties conforming to the requirements of Section 5.3.4 of AWS D1.1-96 for ER80S-Ni1, ER80S-Ni2, ER80S-Ni3, ER80S-D2, E90T1-K2 and E91T1-K2 electrodes.

Reinforcing bars shall be preheated for a distance of not less than 6 inches on each side of the joint prior to welding.

For all welding of ASTM Designation: A 615/A 615M, Grade 40 or Grade 60 bars, the requirements of Table 5.2, "Minimum Preheat and Interpass Temperatures," of AWS D1.4-92 are superseded by the following:

The minimum preheat and interpass temperatures shall be 400° F. for Grade 40 bars and 600° F. for Grade 60 bars. Immediately after completing the welding, at least 6 inches of the bar on each side of the splice shall be covered by an insulated wrapping to control the rate of cooling. The insulated wrapping shall remain in place until the bar has cooled below 200° F.

When welding different grades of reinforcing bars, the electrode shall conform to Grade 40 bar requirements and the preheat shall conform to the Grade 60 bar requirements.

In the event that any of the specified preheat, interpass and post weld cooling temperatures are not met, all weld and heat affected zone metal shall be removed and the splice rewelded.

All welding shall be protected from air currents, drafts, and precipitation to prevent loss of heat or loss of arc shielding. The method of protecting the welding area from loss of heat or loss of arc shielding shall be subject to approval by the Engineer.

Reinforcing bars shall not be direct butt spliced by thermite welding.

The first paragraph of Section 52-1.08C, "Mechanical Butt Splices," of the Standard Specifications is amended to read:

Mechanical butt splices shall be the sleeve-filler metal type, the sleeve-threaded type, the sleeve-swaged type, the sleeve-filler grout type, the sleeve-lockshear bolt type, the two-part sleeve-forged bar type, or the two-part sleeve-friction bar type, at the option of the Contractor.

The following is added after the third paragraph of Section 52-1.08C, "Mechanical Butt Splices," of the Standard Specifications:

Slip requirements shall not apply to mechanical lap splices.

The following is added after Section 52-1.08C(3), "Sleeve-Swaged Mechanical Butt Splices," of the Standard Specifications:

52-1.08C(4) Sleeve-Filler Grout Mechanical Butt Splices.—The sleeve-filler grout type of mechanical butt splices shall consist of a steel splice sleeve that fits closely over the reinforcing bars with a non-shrink grout filler in the annular space between the reinforcing bars and the sleeve and between the ends of the reinforcing bars.

No vibration or movement of the reinforcing steel or sleeve at the splice shall be allowed while the splice is developing sufficient strength to support the reinforcing bars. The Contractor shall submit complete details of the bracing and clamping system to eliminate all vibration or movement at the splice during setup of the filler in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings."

52-1.08C(5) Sleeve-Lockshear Bolt Mechanical Butt Splices.—The sleeve-lockshear bolt type of mechanical butt splices shall consist of a seamless steel sleeve, 2 serrated steel strips welded to the inside of the sleeve, center hole with centering pin, and bolts that are tightened until the bolt heads shear off and the bolt ends are embedded in the reinforcing bars.

52-1.08C(6) Two-Part Sleeve-Forged Bar Mechanical Butt Splices.— The two-part sleeve-forged bar type of mechanical butt splices shall consist of a shop machined two-part threaded steel sleeve that interlocks two hot-forged reinforcing bars ends. The forged bar ends may be either shop produced or field produced.

52-1.08C(7) Two-Part Sleeve-Friction Bar Mechanical Butt Splices.— The two-part sleeve-friction bar type of mechanical butt splices shall consist of a shop machined two-part threaded steel sleeve whose ends are friction welded, in the shop, to the reinforcing bars ends.

The third paragraph of Section 52-1.08D, "Qualification of Welding and Mechanical Splicing," of the Standard Specifications is replaced with the following:

Each operator qualification test for mechanical splices shall consist of 2 sample splices. Each mechanical splice procedure test shall consist of 2 sample splices.

For sleeve-filler, sleeve-threaded, sleeve-lockshear bolt and two-part sleeve friction bar mechanical butt splices, all sample splices shall be made on the largest reinforcing bar size to be spliced by the procedure or operator being tested except that No. 14 bars may be substituted for No. 18 bars.

For sleeve-swaged and two-part sleeve-forged mechanical butt splices, and mechanical lap splices, all sample splices shall be made on the largest reinforcing bar size of each deformation pattern to be spliced by the procedure or operator being tested. When joining new reinforcing bars to existing reinforcement, the qualification test sample bars shall be made with the deformation pattern of the new reinforcement to be joined.

Section 52-1.08E, "Job Control Tests," of the Standard Specifications is replaced with the following:

52-1.08E Job Control Tests.— When mechanical butt splices, shop produced complete joint penetration butt welded splices, or shop produced resistance butt welded splices are used, the Contractor shall furnish job control tests from a local qualified lab. A job control test shall consist of the fabrication, under conditions used to produce the splice, and the physical testing of 3 sample splices for each lot of splices.

A lot of mechanical butt splices is defined as 150, or fraction thereof, of the same type of mechanical butt splices used for each combination of bar size and bar deformation pattern that is used in the work.

A lot of shop produced complete joint penetration butt welded splices, or shop produced resistance butt welded splices, is defined as 150, or fraction thereof, of the same type of welds used for each combination of bar size and bar deformation pattern that is used in the work.

When joining new reinforcing bars to existing reinforcement, the job control test shall be made with the deformation pattern of the new reinforcement to be joined.

A sample splice shall consist of a splice made at the job site to connect two 30-inch, or longer, bars using the same splice materials, position, location, and equipment, and following the same procedures as are being used to make splices in the work. Shorter sample splice bars may be used if approved by the Engineer.

Sample splices shall be made and tested in the presence of the Engineer or the Engineer's authorized representative.

Sample splices shall be suitably identified with weatherproof markings prior to shipment to the testing laboratory.

For sleeve-threaded mechanical butt splices, the reinforcing bars to be used for job control tests shall be fabricated on a random basis during the cutting of threads on the reinforcing bars of each lot and shipped to the job site with the material they represent.

For shop produced complete joint penetration butt welds, shop produced resistance butt welded splices and all types of mechanical butt splices, except the sleeve-threaded type, the Engineer will designate when samples for job control tests are to be fabricated, and will determine the limits of the lot represented by each job control test.

Should the average of the results of tests made on the 3 sample splices or should more than one sample splice in any job control test fail to meet the requirements for splices, all splices represented by that test will be rejected in accordance with the provisions in Section 6-1.04, "Defective Materials," of the Standard Specifications. This rejection shall prevail unless the Contractor, at the Contractor's expense, obtains and submits evidence, of a type acceptable to the Engineer, that the strength and quality of the splices in the work are acceptable.

Section 52-1.08F, "Nondestructive Splice Tests" of the Standard Specifications is replaced with the following:

52-1.08F Nondestructive Splice Tests.—All required radiographic examinations of complete joint penetration butt welded splices shall be performed by the Contractor in accordance with the requirements of AWS D 1.4 and these specifications.

Prior to radiographic examination, welds shall meet the requirements of Section 4.4, "Quality of Welds," of AWS D1.4-92.

Radiographic examinations shall be performed on 25 percent of all complete joint penetration butt welded splices from a production lot. The size of a production lot will be a maximum of 100 splices. The Engineer will select the splices which will compose the production lot and also the splices within each production lot to be radiographically examined.

Should more than 12 percent of the splices which have been radiographically examined in any production lot be defective, an additional 25 percent of the splices, selected by the Engineer from the same production lot, shall be radiographically examined. Should more than 12 percent of the cumulative total of splices tested from the same production lot be defective, all remaining splices in the lot shall be radiographically examined.

Additional radiographic examinations performed due to the identification of defective splices shall be at the Contractor's expense.

All defects shall be repaired in accordance with the requirements of AWS D1.4.

Radiographic examinations will not be required for either shop produced complete joint penetration butt welds or shop produced resistance butt welded splices of No. 8 or smaller bars used as spiral or hoop reinforcement.

In addition to radiographic examinations performed by the Contractor, any mechanical or welded splice may be subject to inspection or nondestructive testing by the Engineer. The Contractor shall provide sufficient access facilities in the shop and at the jobsite to permit the Engineer or his agent to perform the inspection or testing.

The Contractor shall notify the Engineer in writing 48 hours prior to performing any radiographic examinations.

The radiographic procedure used shall conform to the requirements of ASME Boiler and Pressure Vessels Code, Section V, Article 2 and the following:

Two exposures shall be made for each complete joint penetration butt welded splice. For each of the two exposures, the radiation source shall be centered on each bar to be radiographed. The first exposure shall be made with the radiation source placed at zero degrees from the top of the weld and perpendicular to the weld root and identified with a station mark of "0." When obstructions prevent a zero degree placement of the radiation source for the first exposure, and when approved in writing by the Engineer, the source may be rotated, around the centerline of the reinforcing bar, a maximum of 25 degrees. The second exposure shall be at 90 degrees to the "0" station mark and shall be identified with a station mark of "90."

For field produced complete joint penetration butt welds, no more than one weld shall be radiographed during one exposure. For shop produced complete joint penetration butt welds, if more than one weld is to be radiographed during one exposure, the angle between the root line of each weld and the direction to the radiation source shall be not less than 65 degrees.

Radiographs shall be made by either X-ray or gamma ray. Radiographs made by X-ray or gamma rays shall have densities of not less than 2.3 nor more than 3.5 in the area of interest. A tolerance of 0.05 in density is allowed for densitometer variations. Gamma rays shall be from the iridium 192 isotope and the emitting specimen shall not exceed 0.175-inch in the greatest diagonal dimension.

The radiographic film shall be placed perpendicular to the radiation source at all times; parallel to the root line of the weld unless source placement determines that the film must be turned; and as close to the root of the weld as possible.

The minimum source to film distance shall be maintained so as to insure that all radiographs maintain a maximum geometric unsharpness of 0.020 at all times, regardless of the size of the reinforcing bars.

All penetrameters shall be placed on the source side of the bar and perpendicular to the radiation source at all times. One penetrometer shall be placed in the center of each bar to be radiographed, perpendicular to the weld root, and adjacent to the weld. Penetrometer images shall not appear in the weld area.

When radiography of more than one weld is being performed per exposure, each exposure shall have a minimum of one penetrometer per bar, or three penetrameters per exposure. When 3 penetrameters per exposure are used, one penetrometer shall be placed on each of the 2 outermost bars of the exposure, and the remaining penetrometer shall be placed on a centrally located bar.

An allowable weld buildup of 1/8 inch may be added to the total material thickness when determining the proper penetrometer selection. No image quality indicator equivalency will be accepted. Wire penetrameters or penetrometer blocks shall not be used.

Penetrameters shall be sufficiently shimmed using a radiographically identical material. Penetrometer image densities shall be a minimum of 2.0 and a maximum of 3.6.

All radiographic film shall be Class 1, regardless of the size of reinforcing bars.

Radiographs shall be free of film artifacts and processing defects, including, but not limited to, streaks, scratches, pressure marks, or marks made for the purpose of identifying film or welding indications.

Each splice shall be clearly identified on each radiograph and the radiograph identification and marking system shall be established between the Contractor and the Engineer before radiographic inspection begins. Film shall be identified by lead numbers only; etching, flashing, or writing in identifications of any type will not

be permitted. Each piece of film identification information shall be legible and shall include, as a minimum, the following information: Contractor's name, date, name of nondestructive testing firm, initials of radiographer, contract number, part number, and weld number. The letter "R" and repair number shall be placed directly after the weld number to designate a radiograph of a repaired weld.

Radiographic film shall be developed within a time range of one minute less to one minute more than the film manufacturer's recommended maximum development time. Development on the jobsite will not be allowed.

Processing chemistry shall be done with a consistent mixture and quality, and processing rinses and tanks shall be clean to ensure proper results. Records of all developing processes and any chemical changes to the developing processes shall be kept and furnished to the Engineer upon request. The Engineer may request, at any time, that a sheet of unexposed film be processed in the presence of the Engineer to verify processing chemical and rinse quality.

All radiographs shall be interpreted and graded by a Level II or Level III technician who is qualified in accordance with the American Society for Nondestructive Testing's Recommended Practice No. SNT-TC-1A. The results of these interpretations shall be recorded on a signed certification and a copy kept with the film packet.

Technique sheets prepared in accordance with ASME Boiler and Pressure Vessels Code, Section V, Article 2 Section T-291 shall also contain the developer temperature, developing time, fixing duration and all rinse times.

All radiographic envelopes shall have clearly written on the outside of the envelope the following information: name of the Contractor's Quality Control Manager (QCM), name of the nondestructive testing firm, name of the radiographer, date, contract number, complete part description, and all included weld numbers or a report number, as detailed in the Contractor's Quality Control Plan (QCP). In addition, all innerleaves shall have clearly written on them the part description and all included weld numbers, as detailed in the Contractor's QCP.

10-1.30 STEEL STRUCTURES

Construction of steel structures shall conform to the provisions in Section 55, "Steel Structures," of the Standard Specifications and these special provisions.

Attention is directed to "Welding Quality Control" elsewhere in these special provisions.

Attention is directed to "Existing Highway Facilities" elsewhere in these special provisions regarding the containment of debris produced when the existing paint system is disturbed.

GENERAL.--Fabricators of structural steel shall be certified under the AISC Quality Certification Program, Category III, Major Steel Bridges.

Double extra strong steel pipe shall conform to the requirements of ASTM Designation: A53, Grade B.

The first paragraph in Section 55-1.02, "Drawings," of the Standard Specifications is amended to read:

The Contractor shall submit working drawings for structural steel to the Office of Structure Design, Documents Unit, P.O. Box 942874, Mail Stop 9, Sacramento, California 94274-0001 (1801 30th Street, Sacramento, CA 95816), telephone (916) 227-8230, for approval in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings". For initial review, 6 sets of the drawings shall be submitted for highway bridges and 10 sets shall be submitted for railroad bridges. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the Office for final approval and for use during construction.

The seventh paragraph in Section 55-1.02, "Drawings," of the Standard Specifications is amended to read:

At the completion of each structure on the contract, one set of reduced prints on 60 pound (minimum) bond paper, 11 inches by 17 inches in size, of the corrected original tracings of all working drawings for each structure shall be furnished to the Engineer. Reduced prints that are common to more than one structure shall be submitted for each structure. An index prepared specifically for the drawings for each structure containing sheet numbers and titles shall be included on the first reduced print in the set for each structure. Reduced prints for each structure shall be arranged in the order of drawing numbers shown in the index.

The eighth paragraph in Section 55-1.02, "Drawings," of the Standard Specifications is amended to read:

The edge of the corrected original tracing image shall be clearly visible and visually parallel with the edges of the page. A clear, legible symbol shall be provided on the upper left side of each page to show the amount of

reduction and a horizontal and vertical scale shall be provided on each reduced print to facilitate enlargement to original scale.

In addition to the submittals required in Section 55-1.03, "Inspection," of the Standard Specifications, the Contractor shall furnish certified test reports of tests on fastener components and fastener assemblies performed prior to shipment to the job-site. Fastener assemblies shall consist of the following components: high-strength bolt, or equivalent fastener, nut and washer. Certified test reports for fastener components and fastener assemblies shall be furnished to the Engineer prior to use of the fastener assembly. The certified test reports shall include the rotational capacity lot numbers for tensioned fasteners and test reports specified in the certification, report, and certification and test report sections in the appropriate ASTM specifications for the fastener components.

STRUCTURAL STEEL MATERIALS.--The first paragraph, including the material table, in Section 55-2.01, "Description," of the Standard Specifications is amended to read:

Description.--The various materials shall conform to the specifications of ASTM as listed in the following tabulation with certain modifications and additions as specified:

| MATERIAL | SPECIFICATION |
|---|---|
| Structural steel | ASTM Designation: A 709/A 709M, Grade 36 [250] or * A 36/A 36M |
| High strength low alloy columbium vanadium steel | ASTM Designation: A 709/A 709M, Grade 50 [345] or * A 572/A 572M, Grade 50 [345] |
| High strength low alloy structural steel | ASTM Designation: A 709/A 709M, Grade 50W [345 W] or * A 588/A 588M |
| High-yield strength, quenched and tempered alloy steel plate suitable for welding | ASTM Designation: A 709/A 709M, Grade 100 [690] and Grade 100W [690W] or * A 514/A 514M |
| Steel fasteners for general applications: | |
| Bolts and studs which include threaded rods and nonheaded anchor bolts | ASTM Designation: A 307 or AASHTO Designation: M 314, Grade 36 or 55 |
| Nuts | ASTM Designation: A 563 including Appendix X1 |
| Washers | ASTM Designation: F 844 |

| | |
|---|---|
| High strength steel fasteners: | |
| Bolts for structural steel joints | ASTM Designation: A 325 or A 325M |
| Bolts and studs which include threaded rods and nonheaded anchor bolts, for general applications | ASTM Designation: A 449 |
| Nuts | ASTM Designation: A 563 including Appendix X1 or A 563M including Appendix X1 |
| Washers | ASTM Designation: F 436 or F 436M |
| Direct tension indicators | ASTM Designation: F 959 or F 959M |
| Carbon steel for forgings, pins and rollers | ASTM Designation: A 668/A 668M, Class D |
| Alloy steel for forgings | ASTM Designation: A 668/A 668M, Class G |
| Pin nuts | ASTM Designation: A 36/A 36M |
| Carbon-steel castings | ASTM Designation: A 27/A 27M, Grade 65-35 [450-240], Class 1 |
| Malleable iron castings | ASTM Designation: A 47, Grade 32510 or A 47M, Grade 22010 |
| Gray iron castings | ASTM Designation: A 48, Class 30B |
| Carbon steel structural tubing | ASTM Designation: A 500, Grade B or A 501 |
| Steel pipe (Hydrostatic testing will not apply) | ASTM Designation: A 53, Type E or S, Grade B; A 106, Grade B; or A 139, Grade B |
| Stud connectors | ASTM Designation: A 108 and ANSI/AASHTO/AWS D1.5 |
| * Grades that may be substituted for the equivalent ASTM Designation: A 709 steel, at the Contractor's option, subject to the modifications and additions specified and to the requirements of A 709. | |

The second paragraph in Section 55-2.01, "Description," of the Standard Specifications is deleted.

The fifth paragraph in Section 55-2.01, "Description," of the Standard Specifications is amended to read:

All structural steel plate used for the fabrication of tension members, tension flanges, eyebars and hanger plates and for splice plates of tension members, tension flanges and eyebars shall meet the longitudinal Charpy V-notch impact value requirements specified herein. Sampling procedures shall conform to the provisions in ASTM Designation: A 673/A 673M. The H (Heat) frequency of testing shall be used for structural steels conforming to ASTM Designations: A 709/A 709M, Grades 36, 50 and 50W. The P (Piece) frequency of testing shall be used for structural steel conforming to ASTM Designation: A 709/A 709M, Grades 100 and 100W. Charpy V-notch impact values shall be determined in accordance with ASTM Designation: E 23.

The first paragraph in Section 55-2.02, "Structural Steel," of the Standard Specifications is amended to read:

Unless otherwise specified or shown on the plans, all structural steel plates, shapes and bars shall conform to ASTM Designation: A 709/A 709M, Grade 36.

High-strength structural steel bolts, or equivalent fasteners, and other bolts attached to structural steel, with nuts and washers shall be galvanized by mechanically deposited coating.

Rotational capacity tests shall be performed on fastener assemblies prior to shipment to the job-site in accordance with the provisions of ASTM Designation: A 325 and the following:

- A. Each combination of bolt production lot, nut lot and washer lot shall be tested as an assembly.

B. A rotational capacity lot number shall be assigned to each combination of lots tested, and the minimum frequency of testing shall be 2 assemblies per rotational capacity lot.

C. Tests shall be performed in accordance with the requirements for long or short bolts in Appendix A-1 of "High-Strength Bolts for Bridges," Report No. FHWA-SA-91-031, dated May 1991.

Each shipping unit of fastener assemblies shall be plainly marked with the rotational capacity lot number.

CHECK TESTING.--Structural steel shall conform to the designated ASTM Standard and the check testing requirements of this section.

Check samples shall be furnished for each heat of maximum thickness of:

Cover plates and splice plates at tower legs, lower chord and vertical member retrofit.

Steel plates, shapes or bars containing check samples shall be furnished from the mill with extra length in order to provide for removal of material for check samples at the point of fabrication. Check samples may be cut from either end of the designated plate, shape or bar.

At the option of the Contractor, check samples may be removed at the rolling mill rather than at the point of fabrication. The sample will be removed from the mill plate that will be stripped by the fabricator to produce the designated plate and may be taken from any location within that plate. The mill plate from which samples are removed shall be marked with the same identifying numbers as are used on the samples. If the Contractor requests that samples be removed at the rolling mill, the Contractor will be charged for the cost of providing State inspection at the mill to witness the removal of samples, as provided in Measurement and Payment of these special provisions.

Unless otherwise directed, material for check samples shall be removed by the Contractor in the presence of the Engineer. Check samples for plates wider than 24 inches shall be 14 inches wide and 18 inches long with the long dimension transverse to the direction of rolling. Check samples for all other products shall be 18 inches long, taken in the direction of rolling, and the width shall be the product width. Check samples shall be removed and delivered to the Engineer before the material is fabricated into components and preferably when it is still being prepared for fabrication. The direction of rolling, heat numbers, and plate numbers shall be marked on the samples with paint or other indelible marking material or may be steel stamped in one corner of the plate.

Unless otherwise directed, check samples shall be delivered to the Transportation Laboratory at the Contractor's expense. The check samples will be tested by the Transportation Laboratory for compliance with the requirements specified in ASTM and these special provisions. Check sample test results will be reported to the Contractor within 10 working days of delivery to the Transportation Laboratory. In the event several samples are submitted on the same day, an additional day will be added for each 2 samples submitted. The test report will be made for the group of samples.

The results of the tensile and impact tests shall not vary more than 5 percent below specified minimum or 5 percent above specified maximum requirements except that if the initial check test results vary more than 5 percent but not more than 10 percent from the specified requirements, a re-test may be performed on another sample from the same heat and thickness. The results of the re-test shall not vary more than 5 percent from the original specified requirements. If the results of check tests exceed these permissible variations, all material planned for use from the heat represented by said check samples shall be subject to rejection.

FABRICATION.--The first subparagraph of the third paragraph in Section 55-3.14, "Bolted Connections," of the Standard Specifications is amended to read:

Contact surfaces and member surfaces under bolt heads, nuts or washers within the grip of all high-strength bolted connections shall be cleaned and coated before assembly in accordance with the provisions for cleaning and painting structural steel in the special provisions.

When properly installed, bolts, threaded studs and rods, and anchor bolts, shall extend at least 1/8-inch beyond the outer face of the nut.

Prior to acceptance or installation, and after shipment of the fastener assemblies to the job-site, the Contractor shall perform installation tension tests and rotational capacity tests on fastener assemblies. The installation tension tests and rotational capacity tests shall be performed at the job-site, in the presence of the Engineer, on each rotational capacity lot of fastener assemblies. The installation tension tests shall be performed on 3 representative fastener assemblies in accordance with Section 8, "Installation and Tightening," of the "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts," approved by the Research Council on Structural Connections of the Engineering Foundation. The rotational capacity tests shall be performed in accordance with the procedures for rotational capacity tests in "Structural Steel Materials," of these special provisions.

Additional installation tension tests and rotational capacity tests shall be performed, when ordered by the Engineer, if significant changes are noted in original surface condition of threads, washers or nut lubricant. Failure of a job-site

installation tension test or a rotational capacity test will be cause for rejection of all fastener components in the rotational capacity lot.

Bolt, or equivalent fastener, nut and washer combinations used in high-strength bolted connections shall be from the same rotational capacity lot.

Tension control bolts shall be used in high-strength bolted connections. Other bolts conforming to ASTM Designation: A 325 may be used where the use of tension control bolts is not practical because of location, length or size and when approved by the Engineer. Direct tension indicators shall not be used unless otherwise specified.

Tension control bolts shall conform to the requirements for other equivalent fasteners or fastener assemblies as specified in the fifth paragraph of Section 55-3.14 of the Standard Specifications. Tension control bolts shall have a splined end extending beyond the threaded portion of the bolt that shears off when the specified bolt tension is attained. During installation, the torque required to turn the nut on the tension control bolt shall be counterbalanced by the torsion shear resistance of the splined end of the bolt. The bolt head type and head location shall be consistent within a joint.

The sheared ends of tension control bolts shall be completely sealed with non-silicone type sealing compound conforming to the provisions in Federal Specification TT-S-230, Type II. Latex-type sealing compounds shall not be used. The sealant shall be gray in color and shall have a minimum thickness of 50 mils. The sealant shall be applied to a clean sheared surface on the same day that the splined end is sheared off.

WELDING.--The third paragraph of Section 55-3.17, "Welding," of the Standard Specifications is amended to read:

The extent of radiographic testing on groove welds shall be in accordance with the requirements in ANSI/AASHTO/AWS D1.5, Subsection 6.7.1.2. In addition, twenty-five percent of all main member tension groove welds, in material in excess of 1/2 inch thickness, shall be ultrasonically tested.

The flat side of all butt welded joints shall not deviate from flatness by more than 3/16 inch in a length of 2 feet centered over the weld joint.

Table 2.2 of ANSI/ AASHTO/AWS D1.5 is superseded by the following table:

| Base Metal Thickness of the Thicker Part Joined, in. | Minimum Partial Joint Penetration Groove Weld Size, in.* |
|---|---|
| Over 1/4 to 1/2 inclusive | 3/16 |
| Over 1/2 to 3/4 inclusive | 1/4 |
| Over 3/4 to 1 1/2 inclusive | 5/16 |
| Over 1 1/2 to 2 1/4 inclusive | 3/8 |
| Over 2 1/4 to 6 inclusive | 1/2 |
| Over 6 | 5/8 |

*Except the weld size need not exceed the thickness of the thinner part.

Dimensional details and workmanship for welded joints in tubular and pipe connections shall conform to the provisions in Part C, Structural Details; Part D, Special Provision for Welding Tubular Joints; and Part E, Workmanship, in Section 10 of AWS D1.1.

BEARINGS AND ANCHORAGES.--The last three paragraphs in Section 55-3.19, "Bearings and Anchorages," of the Standard Specifications are amended to read:

Mortar to be placed below masonry plates or bearing plates of the bearing assemblies and in anchor bolt sleeves or canisters shall conform to the requirements in Section 51-1.135, "Mortar," of the Standard Specifications except that the proportion of cement to sand shall be one to 3.

Anchor bolts shall be either headed bolts, installed with or without pipe sleeves, or corrugated metal canisters as detailed on the plans. The anchor bolts shall be carefully installed to permit true positioning of the bearing assemblies.

When anchor bolts are installed in pipe sleeves or metal canisters, the pipes or canisters shall be completely filled with mortar. Such mortaring and the construction of mortar pads under masonry plates, if required, shall be done after erection of girders and before placing deck concrete.

MEASUREMENT AND PAYMENT.--Measurement and payment for steel structures shall conform to the provisions in Sections 55-4.01, "Measurement," and 55-4.02, "Payment," of the Standard Specifications and these special provisions.

The sixth paragraph in Section 55-4.02, "Payment," of the Standard Specifications is amended to read:

If a portion or all of the welded structural steel is fabricated more than 300 air line miles from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Whereas it is and will be impracticable and extremely difficult to ascertain and determine the actual increase in such expenses, it is agreed that payment to the Contractor for furnishing said structural steel from each fabrication site located more than 300 air line miles from both Sacramento and Los Angeles will be reduced \$5,000 or by an amount computed at \$0.020 per pound of structural steel fabricated, whichever is greater, or in the case of each fabrication site located more than 3,000 air line miles from both Sacramento and Los Angeles, payment will be reduced \$8,000 or by \$0.036 per pound of structural steel fabricated, whichever is greater.

10-1.31 CLEAN AND PAINT STRUCTURAL STEEL

All exposed new metal surfaces and connections to existing steel, except where galvanized, shall be cleaned and painted in accordance with the provisions in Sections 59-2, "Painting Structural Steel," and 91, "Paint," of the Standard Specifications and these special provisions.

Attention is directed to "Existing Highway Facilities" elsewhere in these special provisions regarding the containment of debris produced when the existing paint system is disturbed.

Unless otherwise specified, should 7 days elapse between paint applications, the painted surface shall be water washed prior to the next paint application. Water washing is defined as a pressure water wash with a minimum nozzle pressure of 300 psi. During washing, the tip of the pressure nozzle shall be placed between 12 and 18 inches from the surface to be washed.

Finish coats shall be applied after erection. After erection, and before applying finish paint, all areas where undercoat paint has been damaged or has deteriorated and all exposed unpainted surfaces shall be thoroughly cleaned, of all foreign substances, and then spot cleaned and painted with undercoats as specified in these special provisions.

Contact surfaces of high strength bolted connections shall be cleaned and painted before assembly in accordance with the requirements for bolted connections in "Steel Structures," of these special provisions.

The third paragraph in Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

At contact surfaces of stiffeners, railings, or built up members, any open seam exceeding 6 mils in width that would retain moisture shall be caulked with non-silicone type sealing compound conforming to the provisions in Federal Specification TT-S-230, Type II, or other approved material. Latex-type sealing compounds shall not be used. The sealing compound shall be applied at least 72 hours after the last application of undercoat. The sealing compound shall be allowed to cure as recommended by the manufacturer prior to the pressure washing with fresh water and the application of first finish coat. When no finish coats are applied, the sealing compound shall be gray in color.

The fourth paragraph in Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

The dry film thickness of the paint will be measured in place with a calibrated Type 2 magnetic film thickness gauge according to Steel Structure Painting Council Specification SSPC-PA2.

The existing paint systems consist of materials listed in "Existing Highway Facilities," of these special provisions.

CLEANING.--All new metal surfaces, except where galvanized, shall be dry blast cleaned, in accordance with the provisions of Surface Preparation Specification No. 10, "Near White Blast Cleaning," of the Steel Structures Painting Council. Blast cleaning shall leave all surfaces with a dense, uniform, angular, anchor pattern of no less than 1 1/2 mils as measured in accordance with ASTM Designation: D 4417.

Areas of existing steel to the limits specified herein, except where galvanized, shall be cleaned and dry spot blast cleaned, in the order listed, in accordance with the following:

1. A fresh water pressure wash with equipment having a minimum nozzle pressure of 300 pounds per square inch.
2. Blast clean as provided in Section 59-2.03, "Blast Cleaning," of the Standard Specifications. Blast cleaning shall be performed within 72 hours after pressure washing, but not before the surfaces are thoroughly dry.

The areas of existing steel to be cleaned and dry spot blast cleaned shall consist of the following, as a minimum: (1) contact surfaces of steel plate connections, (2) contact surfaces under bolt heads, nuts or washers of all high-strength bolted connections (except inside surfaces of enclosed column cells), (3) exposed bare surfaces of existing steel remaining after removing, trimming, cutting, drilling or reaming, (except inside surfaces of enclosed column cells), (4) all areas of existing steel within a 4-inch radius measured in any direction from the point of application of heat for

welding or flame cutting, and (5) all areas within 4 inches of the centerline of rivets to be removed including holes remaining after rivet removal (except inside surfaces of enclosed column cells).

Abrasives used for blast cleaning existing steel shall comply with Abrasive Specification No. 1, "Mineral and Slag Abrasives," of the Steel Structures Painting Council, and shall not contain hazardous material.

A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications and a Material Safety Data Sheet shall be furnished prior to use for each shipment of blast cleaning material for existing steel, except for silica sand.

PAINTING.--All blast cleaned new metal surfaces shall receive a single undercoat consisting of a waterborne inorganic zinc coating conforming to the provisions of AASHTO Designation M 300, Type II, except that the first 3 sentences of Section 4.7, "Primer Field Performance Requirement," and the entire Section 4.7.1 of the AASHTO Specification shall not apply. The inorganic zinc coating shall be listed on the qualified products list. The qualified products list and copies of the paint specifications for phenolic type undercoats and aluminum finish paints, may be obtained from the Transportation Laboratory, (916) 227-7000.

All exposed galvanized surfaces shall be prepared and painted in accordance with Section 59-3, "Painting Galvanized Surfaces," of the Standard Specifications and these special provisions, except that the abrasive blast and Pre-treatment of Vinyl Wash Primer shall not be applied.

Inorganic zinc coating shall be used within 12 hours of initial mixing.

Application of inorganic zinc coating shall conform to provisions for applying zinc-rich coating in Section 59-2.13, "Application of Zinc-Rich Primer," of the Standard Specifications.

Inorganic zinc coating shall not be applied when the atmospheric or surface temperature is less than 45° F. nor more than 100° F. nor when the relative humidity exceeds 85 percent.

The single undercoat of inorganic zinc coating shall be applied to the required dry film thickness in 2 or more applications within 4 hours after blast cleaning.

The total dry film thickness of all applications of inorganic zinc coating shall be not less than 4 mils nor more than 8 mils.

All areas where mudcracking occurs in the inorganic zinc coating shall be blast cleaned and repainted with inorganic zinc coating to the specified thickness.

Except as approved by the Engineer, a minimum curing time of 72 hours shall be allowed between application of inorganic zinc coating and pressure rinsing with fresh water.

All exposed area of inorganic zinc coating shall be thoroughly rinsed with a pressure system using fresh water and a minimum nozzle pressure of 300 psi. During rinsing, the tip of the pressure nozzle shall be placed between 12 and 18 inches from the surface to be rinsed.

The inorganic zinc coating shall be tested for adhesion and cure. The locations of the tests will be determined by the Engineer. The sequence of the rinsing and testing operations shall be determined by the Contractor. The testing for adhesion and cure will be performed no less than 72 hours after application of the single undercoat of inorganic zinc coating. At the Contractor's expense, satisfactory access shall be provided to allow the Engineer to locate the tests and to test the inorganic zinc coating cure. The inorganic zinc coating shall pass both of the following tests:

The inorganic zinc coating shall have a minimum adhesion to steel of 600 psi when measured at no more than 6 locations per connection or member in accordance with ASTM Designation: D 4541. The Contractor, at the Contractor's expense, shall: (1) verify compliance with the adhesion requirements, (2) furnish test results to the Engineer, and (3) repair the coating after testing.

The inorganic zinc coating cure will be checked by the Engineer. The inorganic zinc coating shall exhibit a solid, hard and polished metal surface when firmly scraped with the knurled edge of a quarter. Inorganic zinc coating that is powdery, soft or does not exhibit a polished metal surface, as determined by the Engineer, shall be repaired by the Contractor, at the Contractor's expense, by blast cleaning and repainting with inorganic zinc coating to the specified thickness.

Blast cleaned existing metal surfaces and exposed bare metal surfaces not blast cleaned, shall be coated with the following undercoat paint system in the order listed:

1. The first undercoat paint conforming to the requirements for Red Primer, High Solids Phenolic Type, Formula PB-201B, shall be applied in one or more applications, to a dry film thickness of not less than 2 mils. The undercoat paint shall be applied to the required dry film thickness within 4 hours after blast cleaning.

2. The second undercoat paint conforming to the requirements for Pink Primer High Solids Phenolic Type Formula PB-202B, shall be applied in one or more applications, to a dry film thickness of not less than 2 mils.

The second undercoat is not required for contact surfaces of existing steel plate connections and existing surfaces that will be under bolt heads, nuts or washers of all high-strength bolted connections.

The total dry film thickness of undercoats, except those surfaces that require only the first undercoat, shall be not less than 4 mils nor more than 8 mils.

Except as approved by the Engineer, a minimum curing time of 72 hours shall be allowed between application of second undercoat and pressure rinsing with fresh water.

All exposed areas of inorganic zinc undercoat, phenolic undercoat, and galvanized surfaces shall be thoroughly rinsed with a pressure system using fresh water and a minimum nozzle pressure of 300 psi. During rinsing, the tip of the pressure nozzle shall be placed between 12 and 18 inches from the surface to be rinsed.

After the total dry film thickness of undercoats has been applied, all exposed new metal surfaces (including galvanized surfaces), and exposed undercoated existing surfaces, shall receive the following finish coats:

1. First finish coat paint conforming to the requirements for Non-leafing Aluminum Finish Paint-Waterborne Acrylic Latex, Formula PWB-159D, shall be applied in one or more applications to a dry film thickness of not less than 2 mils.

2. Second finish coat paint conforming to the requirements for leafing Aluminum Finish Paint-Waterborne Acrylic Latex, Formula PWB-160D, shall be applied in one or more applications to a dry film thickness of not less than 2 mils.

The first finish coat shall be applied within 48 hours following the pressure rinsing with fresh water, of the exposed areas of inorganic zinc undercoat, phenolic undercoat, and galvanized surfaces.

A minimum of 12 hours drying time shall be allowed before applying the succeeding finish coat.

The total dry film thickness of all applications shall be not less than 8 mils nor more than 16 mils.

MEASUREMENT AND PAYMENT.--Dry spot blast cleaning and undercoat painting of blast cleaned areas of existing surfaces will be measured by the square foot. , and will be paid for as spot blast clean and paint undercoat. The quantities for payment will be determined from the limits as specified herein.

The contract price paid per square foot for spot blast clean and paint undercoat shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in spot blast cleaning and painting undercoat on the existing surfaces complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract lump sum price paid for clean and paint structural steel shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cleaning and painting the surfaces of the new structural steel and finish coat on undercoated areas of existing metal, complete in place, including rinsing with a pressure system, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.32 MODIFY WATER AND AIR LINES (BRIDGE)

Modify water and air lines shall consist of modifying water lines, air lines and the East Anchorage exhaust system. Water and air lines shall be of the size shown and shall conform to the details shown on the plans, the provisions in Section 20-5, "Irrigation Systems," of the Standard Specifications and these special provisions. Exhaust fan shall conform to the details shown on the plans, the latest edition of the SMACNA "HVAC Duct Construction Standards", the Standard Specifications and these special provisions.

The maximum allowable consecutive shutdown period of the 12" water line is two days. The Contractor shall inform the Engineer of notification to the City and County of San Francisco Public Utilities Commission, San Francisco Water Department, City Distribution Division at (415) 550-4949 one-week prior to any shutdown.

Working drawings.--The Contractor shall submit complete working drawings to the Office of Structure Design, Documents Unit, P.O. Box 942874, Sacramento, CA 94274-0001 (1801 30th Street, Sacramento, CA 95816), telephone (916) 227-8230, in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications.

The working drawings shall show the temporary support of the water and air lines and shall be supplemented by manufacturer's descriptive data, performance data and installation instructions for the following:

- Pipe hanger assembly and lateral restraint assembly
- Mechanical couplings, flexible and rigid
- Butterfly valve
- Pipe and fittings
- Pipe grooving procedure
- Supply fan
- Ductwork

Wall louver

For initial review, 5 sets of drawings shall be submitted. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the said Office for final approval and use during construction.

MATERIALS:--

Pipe and fittings for water line 4-inch diameter or greater.--Pipes and fittings for water lines of 4-inch diameter or greater shall be grooved end standard weight galvanized steel pipe conforming to ASTM Designation: A 53 or A 120. The weight of the zinc coating shall be not less than 90 percent of that specified in ASTM Designation: A 53. Pipe grooves shall conform to AWWA Designation: C606.

Fittings shall be premanufactured grooved end. Fittings shall be malleable iron, hot dip galvanized according to ASTM Designation: A153.

Pipe and fittings for air line less than 4-inch diameter.--Pipe and fittings for air line less than 4-inch diameter shall be schedule 40 galvanized steel pipe conforming to ASTM Designation: A 53 or A 120, with 150-pound galvanized malleable iron banded screwed fittings and galvanized steel couplings. The weight of the zinc coating shall be not less than 90 percent of that specified in ASTM Designation: A 53.

Butterfly Valve.--Butterfly valve shall be premanufactured grooved end, rated to 300 psi, ductile iron body with epoxy coating(inner and outer surface), rubber coated disc with gear operator and hand wheel.

Ball valve.-- Ball valve shall be two piece, minimum 400-pound WOG, stainless steel body and chrome plated or brass ball with full size port.

Mechanical couplings.--Mechanical couplings shall be suitable for grooved pipe, two piece, ductile iron housing with manufacturers standard grade enamel paint coating, Type 304 Stainless steel hardware, and a synthetic rubber gasket designed for potable water located around the pipe ends inside the housings. Coupling shall be rated for 800 psi for flexible type and 400 psi for rigid type 12-inch coupling.

Pipe Supports.--Pipe supports for air line less than 4-inch diameter shall be channel type and shall be 1 5/8" x 1 5/8", 12-gage galvanized steel with 17/32 inch diameter bolt holes, 1 1/2 inches on center in the base of the channel. Clamps shall be 2 piece bolted with rubber isolator between pipe and clamp.

Pipe supports for water lines of 4-inch diameter or greater shall be galvanized v-notched chair type with U-bolt, designed for anchoring pipe to structural members.

Structural Steel.--Miscellaneous structural steel, including plate, angle iron, and threaded rod shall conform to the provisions in Section 55, "Steel Structures," of the Standard Specifications. Miscellaneous nuts, bolts and related hardware shall be hot dip galvanized, ASTM Designation: A 325.

Supply fan.-- Supply fan shall be an open, drip-proof motor and belt drive centrifugal blower installed as shown on the plans. Motor and blower shall be assembled on a subbase of welded construction by the blower manufacturer and the unit shall bear the Air Moving and Conditioning Association Certified Rating Seal. Blower shall have welded steel construction, baked enamel finish, 0.059-inch or thicker housing and rotating assembly which is statically and dynamically balanced. Supply fan capacity and rating shall be as shown on the plans.

Ductwork.-- Ductwork shall be galvanized steel sheet metal conforming to the latest edition of the SMACNA "HVAC Duct Construction Standards." Galvanized steel shall be cleaned by washing with mineral spirit solvent sufficient to remove any oil, grease or other materials foreign to the galvanized coating. Duct supports shall be hot-dip galvanized steel. Ductwork shall be installed and braced according to the latest edition of the SMACNA "HVAC Duct Construction Standards."

Wall louver.-- Wall louver shall have V shaped blades and shall be constructed of 18-gage electrogalvanized steel. Wall louver shall be set in a continuous channel frame with a 1/4-inch bronze mesh bird-screen in a removable frame from the inside face. Surfaces shall be prepared to receive paint and shall be factory primed. Wall louver shall be Anemostat; K.N. Croder Inc.; Leslie Locke, or equal.

Access cover.-- The access cover shall be the single leaf floor access cover with 1/4-inch diamond pattern aluminum plate leaf, 1/4-inch aluminum frame and corrosion resistant, stainless steel or brass, hardware throughout. The access

cover shall include an automatic "full open" position lock, and grab bars. The access cover assembly shall be reinforced for a live load of 150 pounds per square foot.

INSTALLATION:-- Water and air lines on bridge structures shall be supported as shown on the plans and in conformance with these special provisions.

Water and air main lines shall be capped as soon as branch lines are removed. Any 4-inch or 6-inch main line may be depressurized a maximum of 5 days during removal of existing branch lines and a maximum of 5 days during installation of the new branch lines. The days may be taken concurrently.

Water and air main lines shall be fitted with caps or plugs such that the main lines can be reenergized to provide compressed air or water to other portions of the bridge.

Cleaning and closing of pipe.--The interior of all pipe shall be cleaned before installation. All openings shall be capped or plugged as soon as the pipe is installed to prevent the entrance of any materials. The caps or plugs shall remain in place until their removal is necessary for completion of the installation.

TESTING.-- Water and air lines less than 12-inch diameter shall be tested in accordance with the provisions in Section 20-5.03H(1), "Method A," of the Standard Specifications, except that the initial testing period shall be 4 hours minimum with no leakage or pressure drop.

The Contractor shall furnish pipe anchorages to resist thrust forces occurring during testing. All leaks shall be repaired and all defective materials shall be replaced by the Contractor at his expense.

Branch lines shall be tested individually from ball valve to upper deck outlet. Main lines and those portions of the branch lines upstream of the ball valve shall be tested as a whole or in sections.

Supply fan shall be tested for 5 consecutive 24-hour days. Ductwork shall be tested with smoke for leakage.

MEASUREMENT AND PAYMENT.-- The contract lump sum price paid for modify water and air line (bridge) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing supply fan and associated work and modify water and air line (bridge), complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for furnishing and installing pipe, pipe supports, steel hangers, and other fittings, concrete supports, ductwork and bracing, testing and checking, shall be considered as included in the contract lump sum price paid for modify water and air line (bridge) and no additional compensation will be allowed therefor.

10-1.33 MISCELLANEOUS CONCRETE CONSTRUCTION

Curb and sidewalk shall conform to the provisions in Section 73, "Concrete Curbs and Sidewalks," of the Standard Specifications.

10-1.34 THRIE BEAM BARRIER

Thrie beam barrier shall conform to the provisions in Section 83-2, "Barriers," of the Standard Specifications and these special provisions.

Attention is directed to "Order of Work" of these special provisions.

Where field cutting or boring of wood posts and blocks is required after treatment, all cuts and holes shall be treated with copper naphthenate as specified in AWP Standard M4. Application of preservative in the field shall conform to the requirements in the last paragraph in Section 58-1.04, "Wood Preservative for Manual Treatment," of the Standard Specifications.

Rail elements and any required backup plates, terminal sections, terminal connectors, and return sections shall conform to the requirements of Type 2 Thrie Beam as shown in AASHTO Designation: M 180.

Single thrie beam barrier on bridges will be paid for at the contract price per linear foot for single thrie beam barrier (bridge). The division point for computing the length for payment of single thrie beam barrier (bridge) and single thrie beam barrier shall be the face of the paving notch of the bridge.

10-1.35 THERMOPLASTIC TRAFFIC STRIPES

Thermoplastic traffic stripes (traffic lines) shall conform to the provisions in Sections 84-1, "General," and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

The State Specification No. for glass beads in Section 84-2.02, "Materials," of the Standard Specifications is amended to read "8010-21C-22 (Type II)."

At the option of the Contractor, permanent striping tape as specified in "Prequalified and Tested Signing and Delineation Materials" elsewhere in these special provisions, may be placed instead of the thermoplastic traffic stripes specified herein, except that STAMARK Brand Pavement Tape, Bisymmetric 1.75 Grade, manufactured by the 3M

Company, shall not be used. Pavement tape, if used, shall be installed in accordance with the manufacturer's specifications. If pavement tape is placed instead of thermoplastic traffic stripes, the pavement tape will be measured and paid for as thermoplastic traffic stripe.

10-1.36 PAINT TRAFFIC STRIPES

Painting traffic stripes (traffic lines) shall conform to the provisions in Sections 84-1, "General," and 84-3, "Painted Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

The subparagraphs of the first paragraph in Section 84-3.02, "Materials," of the Standard Specifications are amended to read:

| | |
|--|-------------------------|
| | State Specification No. |
| Solvent Borne, Acrylic Copolymer Traffic Line - White, Yellow and Black | PT-170-A |
| Water Borne, Traffic Line - White, Yellow and Black | 8010-20A |

The State Specification No. for glass beads in Section 84-3.02, "Materials," of the Standard Specifications is amended to read "8010-004 (Type II)."

At the option of the Contractor, permanent striping tape as specified in "Prequalified and Tested Signing and Delineation Materials" elsewhere in these special provisions, may be placed instead of the painted traffic stripes specified herein, except that "Stamark" Series A320 Bisymetric Grade pavement tape, manufactured by the 3M Company, shall not be used. Pavement tape, if used, shall be installed in accordance with the manufacturer's specifications. If pavement tape is placed instead of painted traffic stripes, the pavement tape will be measured and paid for as paint traffic stripe of the number of coats designated in the Engineer's Estimate.

10-1.37 PAVEMENT MARKERS

Pavement markers shall conform to the provisions in Section 85, "Pavement Markers," of the Standard Specifications and these special provisions.

The second paragraph in Section 85-1.02, "Type of Markers," of the Standard Specifications shall not apply.

Certificates of compliance shall be furnished for pavement markers as specified in "Prequalified and Tested Signing and Delineation Materials" elsewhere in these special provisions.

Attention is directed to "Traffic Control System For Lane Closure" elsewhere in these special provisions regarding the use of moving lane closures during placement of pavement markers with bituminous adhesive.

SECTION 10-2. (BLANK)

SECTION 10-3. ELECTRICAL FACILITIES (SEISMIC RETROFIT)

10-3.01 DESCRIPTION

Electrical facilities (seismic retrofit) shall conform to the provisions in Section 86, "Signals, Lighting and Electrical Systems," of the Standard Specifications and these special provisions.

10-3.02 COST BREAK-DOWN

The Contractor shall furnish to the Engineer a cost break-down for each contract lump sum item of work described in this Section 10-3.

The Contractor shall determine the quantities required to complete the work shown on the plans. The quantities and values shall be included in the cost break-down submitted to the Engineer for approval. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-down submitted for approval.

No adjustment in compensation will be made in the contract lump sum prices paid for the various electrical work items due to any differences between the quantities shown in the cost break-down furnished by the Contractor and the quantities required to complete the work as shown on the plans and as specified in these special provisions.

The sum of the amounts for the units of work listed in the cost break-down for electrical work shall be equal to the contract lump sum price bid for the work. Overhead and profit shall be included in each individual unit listed in the cost break-down, however, costs for traffic control system shall not be included. Bond premium, temporary construction facilities, plant and other items will not be paid for under the various electrical work items and shall be included in the mobilization bid item for the entire project.

The cost break-down shall be submitted to the Engineer for approval within 15 days after the contract has been approved. The cost break-down shall be approved, in writing, by the Engineer before any partial payment for the items of electrical work will be made.

At the Engineer's discretion the approved cost break-down may be used to determine partial payments during the progress of the work and as the basis of calculating the adjustment in compensation for the item or items of electrical work due to changes ordered by the Engineer. When an ordered change increases or decreases the quantities of an approved cost break-down, the adjustment in compensation may be determined at the Engineer's discretion in the same manner specified for increases and decreases in the quantity of a contract item of work in accordance with Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications.

The cost breakdown shall, as a minimum, include the following item:

15 kV Cable replacement

10-3.03 MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS

Protection of Existing Utilities and Maintenance Facilities shall consist of providing temporary support and protection for the utilities, related structures and other maintenance facilities on the bridge, and shall conform to the provisions in section 7-1.11 "Preservation of Property", of the Standard Specifications. These utilities and facilities include, but are not limited to:

1. Utility platforms, walkways, access ladders.
2. Air lines, electrical lines, navigational equipment, seismic equipment and related support structures and appurtenance.
3. Traveler and other scaffolds.

The Contractor shall provide any and all necessary temporary facilities as required to keep all electrical facilities in continuous operation as described below. Temporary electrical facilities shall be installed as required prior to structural or other work that may effect the electrical facilities.

All facilities shall remain in full operation 24 hours per day except:

Part of the Navigational Detection, Warning, and Lighting system may be inoperative for construction providing:

- a. That the Marine Radar Beacon system is completely operational,
- b. And that the weather is clear enough as determined by the Engineer.

Portions of the highway lighting system may be inoperative during construction providing:

- a. It is during daylight hours and that the weather allows as determined by the Engineer.

Portions of the Call Box system may be inoperative providing:

- a. No more than two consecutive call boxes are inoperative at any location, and no less than six operational call boxes separate any inoperative call box or pair of call boxes,
- b. Or the Contractor shall provide personnel whose sole responsibility is to contact the Traffic Monitoring System (TMS) personnel in the event that the motoring public should require an operational call box. The Contractor shall notify the TMS personnel of the exact location of the troubled vehicle. The Contractor shall contact the TMS personnel within one minute of the incident occurrence.

Portions of the TMS may be inoperative for construction providing:

- a. No more than one location (10 detectors per location) is inoperative at a time,
- b. And the duration of the non-operational period is approved by TMS personnel through the Engineer. Submit proposed inoperative plan to the Engineer for approval three days prior to starting any work.

Portions of the bridge 12 kV power system may be inoperative for construction providing:

- a. The down time is approved by the bridge maintenance department through the Engineer.
- b. It is during daylight hours.
- c. And the telephone located in pier W-4 substation remains operational at all times.

10-3.04 CONDUIT

Conduit to be installed shall be the rigid steel type.

When a standard coupling cannot be used for coupling metal type conduit, a UL listed threaded union coupling, as specified in the third paragraph in Section 86-2.05C, "Installation," of the Standard Specifications, or a concrete-tight split coupling or concrete-tight set screw coupling shall be used.

After conductors have been installed, the ends of conduits terminating in junction boxes shall be sealed with an approved type of sealing compound.

10-3.05 CONDUCTORS AND WIRING

Splices shall be insulated by "Method B".

The 15 kV power cable shall be spliced by a certified high voltage electrician and the Contractor shall allow 20 working days to approve the electrician.

The Contractor shall provide the Engineer a Certificate of Compliance from the manufacturer in accordance with the provisions of Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for all the conductors and cables furnished for the project.

Section 86-2.09D, "Splicing," of the Standard Specifications is amended by retitling as "Splicing and Terminations," and the last paragraph is amended to read:

All splices and terminal lugs for conductor sizes No. 8 and smaller shall be soldered by the hot iron, pouring or dipping method. Open flame soldering will not be permitted. All conductors shall have THWN insulation unless otherwise specified.

10-3.06 15 kV SHIELDED SINGLE CONDUCTOR POWER CABLE

The 15 kV shielded single conductor power cable shall be 15 kV rated power cable designed to operate at conductor temperatures of 90° C. normal, 130° C. emergency, and 250° C. short circuit conditions as defined by ICEA S-68-516 (NEMA WC-8) and Underwriters Laboratories (UL) Standard 1072. The cable shall be suitable for installations above or below grade, indoors or outdoors, and in wet or dry locations. The qualifying cable shall be Underwriters Laboratories (UL) labeled as MV-90, Sunlight Resistant and For CT Use (UL), in accordance with UL standard 1072.

The cable shall consist of the following components:

CONDUCTORS.--The conductors shall be compressed, class B, No. 1/0 stranded copper and shall be in accordance with the requirements of ICEA S-68-516. The copper conductors shall consist of all bare strands or tin coated strands in the outer layer accordance with ASTM B3, B8 and B33.

CONDUCTOR SHIELD.--The conductor shield shall be an extruded, black-colored, non-conducting thermoset material in accordance with Section 2.7 of ICEA S-68-516. The minimum average thickness shall be 18 mils.

INSULATION.--The insulation shall be a discharge resistant, ethylene propylene (EP) based compound and be listed by Underwriters Laboratories. The minimum average thickness of the insulation shall be 175 mils. The discharge resistance of the insulation shall be demonstrated by withstanding 21 kV (60 Hz, 25° C., 20% R.H.) for 250 hours without failure when tested in accordance with the method described in ASTM D2275-89 "Standard Test Method for Voltage Endurance of Solid Electrical insulating Materials Subjected to Partial Discharges (Corona) on the Surface".

INSULATION SHIELDING.--The insulation shielding shall consist of a nonmetallic conducting material extruded directly over the insulation and a 5 mils bare copper tape. The nonmetallic layer shall be black-colored with properties and thickness conforming to the requirements of Table 4a of ICEA S-68-516 and Tables 14.2 and 14.3 of UL-1072. The layer shall be free stripping from the EP insulation. The 5 mil bare copper tape shall be helical applied with a 15% overlap, directly over the nonmetallic layer.

OVERALL JACKET.--The overall jacket shall be extruded black-colored Polyvinyl Chloride (PVC) material with physical properties and thickness in accordance with Section 4.4.5 and Table 4-6 of ICEA S-68-516 and shall surface printed as required by UL Standard 1072.

Production Testing shall consist of the following:

- a) Continuous DC Spark testing of the nonconducting stress control layer prior to extrusion of the EP insulation.
- b) Mooney Viscosity, Scorch Viscosity, and Specific Gravity of each batch of the EP Insulation prior to extrusion.

- c) AC Voltage Withstand test for a 5 minute duration, of each finished cable at 35 kV.
- d) Volume Resistivity of the nonmetallic shield.
- e) DC Resistance of all insulated conductors and metallic shields.
- f) Dimensional Verification of all extruded layers.
- g) Absence of water in conductors and interfaces confirmed.

10-3.07 15 kV 3/C SHIELDED POWER CABLE

The 15 kV 3/C shielded power cable shall have the same components as of single power cable as specified above and shall include the following additional components.

CABLE ASSEMBLY.--Cable assembly shall consist of the three shielded conductors cabled in accordance with ICBA S-68-516. Grounding conductors in accordance with Table 20.1 of UL-1072 and suitable filler material shall fill the interstices to make a round cable core. A binder tape shall be helically applied over the core.

INTERLOCK ARMOR.--Interlock armor shall be galvanized steel meeting the requirements of table 4-12 and 4-13 of ICEA S-68-516

OVERALL JACKET.--Overall jacket shall be extruded black-colored polyvinyl Chloride (PVC) material with physical properties and thickness in accordance with section 4.4.5 and table 4-24 of ICEA S-68-516 and Table 26.1 of UL standard 1072. It shall be surface printed as require by UL standard 1072.

10-3.08 6 #16 CONDUCTOR CABLE

The 6 #16 conductors of the cable shall be stranded copper. The insulation of the conductors shall be type THWN and color coded. The cable shall be assembled with non-hygroscopic fillers and binder tape. The outer jacket shall be black polyethylene. The conductors shall be rated for 600 V and the conductors, and cable shall be suitable for use in wet or dry locations and installation in conduit.

10-3.09 NEMA TYPE 3R SCREW COVER JUNCTION BOX

NEMA Type 3R screw cover junction box should be constructed as follows:

1. 12 gauge galvanized steel.
2. Drip shield top and seam-free sides, front and back.
3. Slip-on removable cover fastened with stainless steel screws along bottom edge.
4. Door handles.
5. Embossed mounting holes on back of enclosure.
6. No gasketing or knockouts.
7. Provision for padlocking.

10-3.10 REMOVING, REINSTALLING OR SALVAGING ELECTRICAL EQUIPMENT

Salvaged electrical materials shall be hauled to Caltrans Electrical Maintenance Station, 30 Richard Street, San Francisco, CA 94134, (415) 330-6509, and stockpiled.

The Contractor shall provide equipment, as necessary, to safely unload and stockpile the material. A minimum of two working days notice shall be given prior to delivery.

10-3.11 PAYMENT

Full compensation for hauling and stockpiling electrical materials shall be considered as included in the contract price paid for the item requiring the material to be salvaged, and no additional compensation will be allowed therefor.

The contract lump sum price for electrical facilities (seismic retrofit) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing electrical facilities (seismic retrofit) complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.